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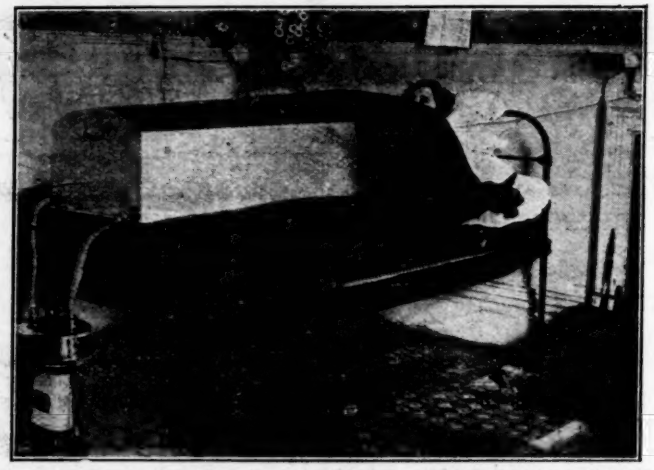

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A British Medical Association Lecture

ON

THE TREATMENT OF BURNS IN CHILDREN.

GIVEN TO THE ABERDEEN DIVISION, APRIL 21ST, 1927,

BY

JOHN FRASER, *M.C.*, M.D., F.R.C.S.ED.,

REGIUS PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF EDINBURGH.

"THE child is burned!" I never hear that announcement without a shudder, for it has opened the portals to a long avenue of pain and distress, an avenue that may lead to an age-long disfigurement and too often, by shorter ways, to the tragedy of death. Let us take counsel together about it. Wherein are its dangers? What are its risks? How can disaster be mitigated or avoided?

Some years ago I took the opportunity of investigating one particular aspect of the problem—it was that of mortality; the result of the investigation was disconcerting. In a total of 200 cases of burns affecting children up to the twelfth year the death rate averaged 30 per cent. I know it is a startling figure. It is true that the cases from which the records were culled were hospital cases, and so generally of a serious type; it is, moreover, correct to say that the sufferers were children, and therefore more likely to show a heavy mortality. About these facts there is no dispute, and yet I am distressed when I recall that some few years ago one child in three suffering from a burn of moderate severity perished. I have with intent used the term "some few years ago," because recent improvements in the methods of treatment have done much to lighten the shadow. It is of these improvements and advances that I would speak.

THE MEDICO-LEGAL ASPECT.

The subject has a medico-legal aspect, and, as it is one sometimes forgotten, I refer briefly to it.

The statute book contains a law that it is an offence to leave a child of tender years alone in a room with an open fire. The provision is a wise one, and no doubt it has done much to diminish the incidence of burns; but something more is required, for ways and means of escaping the penalties are not difficult to imagine. Certain hospitals recognize the deficiencies of the existing statute, and have instituted regulations which make all cases of burns admitted to their charge notifiable incidents. The notification is to the police, and they, having made the inquiries they consider necessary, take whatever further steps they deem advisable. Experience shows that this later measure is one of real efficacy, and it is to be hoped that its application may be made universal.

CAUSES.

There are, of course, a multitude of ways in which burns may be caused, but, where children are concerned, it is the pulling over of the pot of hot tea or boiling water, and the accidental ignition of the clothing, which are the principal causes of the disaster. In both instances there is the one common and significant feature that the burn is likely to be of considerable surface extent, without, it may be, any real depth of destruction—a feature with considerable bearing upon the ultimate issue.

There are many other points of significance in this matter of the origin of burns to which I need not allude—the daily press disseminates the knowledge admirably: the danger of flannelette as a garment; the education of the child to avoid fire in any shape or form; the demonstration that, when all is said and done, "it was curiosity that once upon a time killed the cat." These are all very minor matters, it may be, and yet how often a young life has been the price paid for their neglect!

PATHOLOGY.

Textbooks, with the dogmatism that is expected from them, have classified burns into various stages or degrees according to the extent of tissue destruction. Such an arrangement no doubt serves its purpose, but it need not concern us to-day. It is rather of the general facts of pathology that I would speak.

When a burn is sustained, a certain amount of cellular disintegration inevitably ensues, and, according to the degree of heat applied, the process varies from complete charring and carbonization to coagulation effects upon the protoplasm of the cell, or it may be to simple reactive phenomena in the cells and blood vessels. This is the significant point—carbonization is not a feature of real importance where the subsequent pathology is concerned. It is certainly an irreparable loss of what may be highly important tissues, but so far as any harmful effects upon the biochemistry of the organism are concerned, the process of destruction has been so complete that the part affected is now an inorganic and inert product, and harmless as far as any dangerous influence is concerned.

It is vastly different, however, with those tissues in which the process of destruction has been less complete. Coagulation of the protoplasm is evidently a process fraught with considerable danger. For a certain period after the injury biochemical activity is in abeyance, but thereafter products of intense toxicity are liberated, which, being absorbed into active circulation, and evidently being peculiarly inimical to the specialized parenchyma cells of the liver, kidney, lymphoid tissue, and the central nervous system, originate a group of serious and distinctive symptoms. These facts have been shown by the experimental work of Willis, Vogt, and other observers, but we are apt to forget them and the influence which they exert in the ultimate clinical picture. I shall have occasion later to allude more fully to the general picture and its relations to clinical features, prognosis, and treatment.

The pathology of a burn is thus something far beyond the local lesion. Widespread chemical changes, many of them imperfectly understood, ensue, and what was at first a local tissue destruction ultimately becomes the picture of a body chemistry distorted and a metabolism deranged.

The ultimate end of the story is characteristic: the body alkalis become depleted; the buffer salts, the last line of defence in so many "tight corners," have yielded up their resources; the sufferer passes in a condition in which the hydrogen-ion content of the body fluids is increased, and the condition we speak of clinically as "acidosis" ensues.

THE CLINICAL PICTURE.

The majority of burns in children are extensive in area and superficial in degree, as one would expect from the rapidly extending flow of steam or boiling water, or the spreading conflagration of the burning garments. A certain measure of shock is always present, and its degree is variable; in some instances it is so severe that a fatal issue is a matter of hours, in other cases it is so slight as to pass unnoticed. Its measure depends upon such various features as the age of the child, the position and extent of the burn, and the psychology of the individual. The dry heat of the flame is associated with a greater measure of shock than the moist heat of the steam or water.

The immediate local effect of a burn is temporarily anaesthetic, but after a few minutes there is intense suffering. The pain is probably relieved by hypnotics, and it would seem that with the passing of the initial shock the most dangerous phase is over, and that the issue, though no doubt a long and a painful process, is not likely to be in doubt as regards life.

For one or two days the optimism appears to be justified, and it may be the case progresses to a favourable issue, but in many instances the progress is otherwise. About the third day the temperature, hitherto keeping within normal limits, or being slightly elevated after the "shock" fall, rises to a level of 101° or 102°. There is an ominous restlessness, the pulse rate quickens, and—most suggestive of all—the breathing alters, at first as shown by an increase in rate, and later as a hyperpnoea from an abnormal stimulus of the respiratory centre. The restlessness passes into delirium, and this in a fatal case is followed by coma. The rapid pulse is a prelude to a developing cardiac weakness, and more general evidences are seen in the slight general cyanosis and the cold extremities.

I imagine there are few of you with experience of burns

who have not seen this tragic sequence of events, and the development is all the more distressing because it is unlooked for, so that a favourable prognosis may have been given after the danger of the initial shock had passed away.

THE CORRELATION OF THE PATHOLOGY AND THE CLINICAL FEATURES.

The point in the clinical history peculiarly critical is about the third day, when the temperature rises and signs of intoxication become apparent. An indication has already been given of the explanation of the event, but it is not out of place at this stage to elaborate the reasoning more fully.

It is the existence within the body of tissues in a state of chemical dissolution that is evidently the exciting feature of the disturbance—not an organismal decomposition, but a chemical change, and one, moreover, which results in the production of potent toxic elements. We have yet to learn the true nature of the product or products. It has been suggested that they are closely allied with, if not exactly similar to, histamine or pyridine. Certainly there are many points of similarity between the picture of "histamine shock" and that of the toxic stage of burns. The dangerous character of the toxaemia depends upon its liability to pick out and deteriorate specialized tissues—the liver cells, the delicate cells of the kidney tubules, and the chromaffin tissue of the suprarenals. The striated heart muscle is poisoned and degenerated, and the lymphoid tissue shows points of focal necrosis. It is not difficult to explain the symptoms and signs which distinguish the early stages of the toxic phase—the rise of temperature, the restlessness, the rapid pulse—each has its pathological counterpart, but, underlying all this, there is some more subtle influence which specifically and definitely deranges metabolic processes. I agree that no individual substance has been isolated, but we have a great body of evidence, both biochemical and experimental, which puts its existence beyond doubt, and we have the demonstration of its effects as a vivid clinical experience.

With a deranged metabolism and the imperfect catalysis which necessarily follows, further toxic elements arise. It is at this stage that the body alkalis are called upon—a last line of defence, as we have called it—and for a time it may be that this influence is sufficient to stave off disaster, but a time comes when the reserve is depleted, and when this occurs the body organization breaks down and death ensues.

Such is an outline of the picture in a severe or a neglected case. Fortunately there are ways and means by which the tragedy can be averted, and these we shall now discuss.

TREATMENT.

The inclination to focus attention upon the local lesion is one with which we can sympathize, but our judgement in this respect must not be unbalanced, lest it be the so common error of failing to see the wood for the trees. In every burn there is a general problem overshadowing in its importance the local lesion, because, if death ensues, the reason in the majority of cases is related to the general change; and the further point is true, that the local condition is the focus from which the general disturbance originates. It is apparent, therefore, that any discussion of treatment must be embodied under two heads—(A) the general problem, and (B) the local error.

The General Problem.

Shock is the state which first demands attention. It is ordinary surgical shock, in which the local injury and the psychological element both play their interacting parts. The condition is treated on the usual conventional lines: the body heat is carefully maintained and stimulants are administered; if there is much pain, as there almost certainly will be, a sedative is given, and morphine is the safest and the best. If, in spite of these simple and ready-to-hand measures, blood pressure readings indicate that the shock condition is deepening, fluid (glucose saline) is given subcutaneously or by proctoclysis. The degree of shock, however, is rarely sufficiently intense to necessitate anything more than the simplest remedies.

As the shock danger is overcome a general improvement becomes manifest, and now is the opportunity to make what provision is possible against the danger that lies ahead. I have described how, in the toxaemia which to some extent must inevitably occur, special calls are ultimately made upon the body alkali reserve. It is no exaggeration to say that on the response given to this demand the issue of life or death may ultimately depend; it surely behoves us, therefore, to make all possible provision for the reckoning which is bound to come. In other words, from the moment the shock danger has abated means should be taken to alkalinize the body as completely as possible, to build up reserves of alkali sufficient, and more than sufficient, to meet the demands which will be made.

In alkaline sodium phosphate we have the best therapeutic medium for the purpose in view, and it is introduced into the body by the available routes. It is given orally (20 to 30 grains of the dibasic salt every four hours), and, being less objectionable than sodium bicarbonate, it is taken more readily by children; in a 5 per cent. solution it is given by proctoclysis. The choice falls upon alkaline sodium phosphate because it remains in the body longer than bicarbonate. For some reason the kidneys, the real avenue of its excretion, do not pass it out with the same facility as they do sodium bicarbonate. The reason may be that the alkaline sodium phosphate forms a stronger colloidal combination with the body elements, and particularly with the blood plasma.

In addition to the alkalinization, a sugar reserve is supplied, this being in view of the calls upon the liver glycogen which accompany any deterioration of that organ. The sugar is supplied in the form of glucose, as a 5 per cent. solution, and the various methods of its administration are well known to all of you. Coincident with these various preparations and precautions fluid should, of course, be supplied in abundance, preferably by the bowel and the mouth.

Is there any further precautionary measure which can be taken? One has been suggested, but I cannot speak with conviction as to its value. An attractive possibility lies in the discovery of a means by which the toxic element in circulation could be fixed or otherwise corrected, and it has been suggested that we have such a fixative or corrective in hexamine (urotropine). This drug, when administered in solution by the bowel, is said to have a beneficial action in cases of burns, and it is further stated that the benefit springs from the corrective action of the formalin basis upon the toxic element. I understand that the idea has arisen from the fact that hexamine is occasionally used in this way in the treatment of septic toxaemias.

In these various measures, some of proved value, others empirical, we have the different preventive procedures known to us at present, and it is the duty of everyone to put them into practice when the necessity arises.

In a certain proportion of cases, in spite of all efforts, toxaemia of a severe type will develop. Are there any special means of treatment lying to our hands in this event? The late Dr. Bruce Robertson of Toronto shed some light upon this question, and, though the method may seem too specialized for use in general practice, it demands mention. When it is evident that a severe toxaemia is developing it would seem that a blood transfusion might be of benefit, partly by improving the general condition and partly by counteracting the poison in circulation. The suggestion has often been put into practice, but the results of simple transfusion have been disappointing. It was at this stage that Robertson suggested that exsanguination might be combined with transfusion, and at the present time it is in this measure that we have the only treatment likely to prove efficacious in a toxaemia of real intensity. I do not propose to enter into any detail regarding it, but the principle of its method is that the sufferer is bled in a proportion of 20 c.cm. of blood for each pound of body weight. When sufficient exsanguination has been secured, a transfusion of fresh blood from a suitable donor is given to an amount sufficient to counterbalance the loss already sustained by the exsanguination.

The Local Error.

The local error, as the lesion "visible and seen," would seem to make the most urgent demands upon one's attention, but I hope I have succeeded in showing that it is only one point in a general problem.

We have certain ideals to set before ourselves in the local treatment of a burn, and of course I speak of the recent burn, not of the neglected septic sore—this stands in a class by itself. The ideals are to maintain asepticity of the part, to keep the affected tissues dry, and to "fix" the injured tissues in order, if possible, to prevent the dissemination of toxic products into the general circulation. The most successful local applications will be those which fulfil the above desiderata.

Before discussing the individual methods, however, there is the question of the immediate attention to the burnt area. To avoid suffering and to facilitate examination, a light general anaesthesia may be given. The clothes, if adherent, are removed by soaking the part in a warm sterile solution of 10 per cent. sodium bicarbonate. The way in which blisters are to be dealt with depends upon the choice of the method of local treatment. If a "fixative" or "coagulant" technique is to be followed they should be punctured and the pellicle removed, as a coagulum will not form upon detached epithelium; on the other hand, if such a "protective" technique as the paraffin method is chosen, the blisters are punctured and emptied and the pellicle allowed to remain *in situ*.

The Types of Local Treatment.

It is possible and convenient to group the various types of local treatment under three headings according to the ways in which they exert their individual benefits. Thus there are—

A. Fixation methods, such as the alcohol method, the tannic acid method, and others, all of which are beneficial in so far as they fix the "cooked" tissues and so arrest the production and absorption of the toxin.

B. Biochemical methods—for example, the alkaline treatment—which act by counteracting the toxic substance as it is produced.

C. Protective methods—for example, the paraffin or ambrine methods—which exert their benefits by a mechanical protective influence upon the affected tissues.

Perhaps I ought to say that there is yet a fourth method, that of excision of the burnt area. It has been seriously practised in certain Continental clinics, and it is obvious how completely it ensures the abolition of a toxaemia, but the field for its use is at best a limited one, and, in view of the success which has attended less drastic methods, it need not be considered as a practical possibility.

Permit me briefly to discuss certain individual points of the various methods which are of practical value.

Fixation Methods.

1. *Treatment by Absolute Alcohol.*—This method is undoubtedly one of value. It is obvious how completely it fulfils the ideals of an antiseptic, a desiccant, a fixative. Has it, then, any disadvantages? It has; its rapid evaporation makes a continuous application difficult, and, if a large area is to be treated, the expense is considerable. It finds its greatest value in localized burns of the face, because the scarring is less than by any other type of treatment. When the alcohol method is employed it is essential that the entire affected area be kept constantly moistened with the fluid. A gauze pad several layers thick is laid over the affected surface, and is kept saturated by repeated spraying or by laying a number of capillary drains upon its surface and connecting these with a small central reservoir. The method, of course, necessitates complete confinement to bed and a great deal of attention, but the results in a suitable case are remarkable.

2. *The Picric Acid Method.*—Until recently this was the most popular method of treatment. The composition of the fluid is as follows:

Picric acid	2 drachms.
Absolute alcohol	1½ oz.
Water	To 2 pints.

To obtain the best results the application should be made as a spray or as a paint, frequently repeated, and the part should be exposed to the air in order to hasten evaporation. A thin gauze covering is all that is necessary. Picric acid is a weak antiseptic, but it has certain powers of cell fixation which may inhibit the production of toxaemia. The method is associated with a risk which must never be lost sight of; in extensive burns the absorption may be so great that poisoning effects are produced.

3. *The Aluminium Aniline Method.*—This application has not met with wide recognition in this country; its use is more favoured abroad. A 2 per cent. aluminium acetate in spirit solution is mixed with a 5 per cent. alcoholic solution of methylene blue in a proportion of ten parts of the aluminium solution to one part of the methylene blue. The solution is sprayed upon the affected surface, exposure to the air is encouraged, and only a light gauze dressing is kept in place.

4. *Treatment by Adrenaline.*—Douglas has described promising results from the use of an adrenaline application. A solution of 1 in 10,000 is employed, frequent spray applications are made, and, as in the other methods, exposure to the air is encouraged. Adrenaline has considerable bactericidal and antiseptic value, but in this instance its benefit depends upon its vaso-constrictor influence and the diminished absorption of toxin from the burnt area. Rawdin and Ferguson[1] employ a solution consisting of 1/2 per cent. novocain to each ounce of which is added 10 minims of 1 in 1,000 adrenaline.

5. *The Tannic Acid Treatment.*—Pfeiffer first showed that the toxic extracts from burned tissues are precipitable *in vitro* by mercury bichloride in an acid solution or by phosphotungstic acid. Mercury bichloride was actually used as a therapeutic measure in the treatment of burns by Fauntleroy and Ravogli, but the risks of absorption from a large burned area are too great, and the method has never met with acceptance. Davidson, while investigating phosphotungstic acid, had his attention drawn to the fact that tannic acid has similar properties with fewer disadvantages, and he introduced and elaborated its use in burns. Its value lies in the fact that it precipitates the poisonous substance in burnt tissue and tans the affected area into a resistant and partly insensitive area unlikely to be the site of any septic invasion. The application is made in various ways. After many experiments we have found the most satisfactory to be the spraying of the surface with a freshly prepared 2.5 per cent. watery solution of tannic acid every hour until the tanning is complete, as shown by the deep brown colour of the coagulum. The part is thereafter left exposed to the air, but protected from any gross injury by a sterile gauze covering. If cold is complained of, the part may be placed in an electric light cradle. When the burn is on the face, and particularly in the proximity of the eyes, 5 per cent. tannic acid ointment, made with equal parts of lanoline and vaseline as a basis, may be substituted for the aqueous solution, but the efficiency of the ointment is much less than that of the solution. In a period of time varying from fourteen to twenty days the tanned area separates, to leave a clean granulating surface. The use of tannic acid is a real advance in the treatment of burns, and more than any other method it has reduced the mortality figure.

The Biochemical Method.

Alkaline Treatment.—Many burns do extraordinarily well if treated in a bath of warm sterile water containing 10 per cent. sodium bicarbonate, and, when a small child is severely and extensively burnt, this is a most valuable and efficient method. The child is slung in some kind of hammock arrangement, and provision is made to keep the water at a uniform temperature. If such subtotal immersion is for any reason impossible, or if the burn is small, the application of a light compress soaked in a 10 per cent. watery solution of sodium bicarbonate is soothing and efficacious. The value of the method is based on biochemical data.

Wiener[2] found that the intracellular proteoses demand a faintly acid medium for their full activity, and this activity is checked by exposure to an alkaline medium for any length of time. We have already alluded to certain aspects of the question in speaking of the alkalinization

which is intended to prepare for the oncoming toxaemia, and alkalinization, both general and local, will probably figure in future schemes of burn treatment.

Protective Methods.

The Paraffin Method.—The various methods of treatment hitherto mentioned have acted either as a chemical antidote or as a fixative of cells and their toxins; the value of the paraffin method lies in the protection and mechanical fixation of the part. The original "ambrine," or No. 7 paraffin, is the best application. Its constitution is as follows:

Resorcin	1 part
Eucalyptus oil	2 parts
Olive oil	5 ,,
Soft paraffin	25 ,,
Hard paraffin	67 ,,

The combination melts at 48° C.

There are various ways of making the application. The part may be first brushed over with absolute alcohol, and the surface thoroughly dried by a current of hot air. The burnt area is then covered with the fluid wax, which has previously been brought to the proper temperature in a water-bath. The wax is applied as a spray, or painted on with a sterile brush. Over this a thin layer of sterile cotton-wool is applied, and, when the application has hardened, a further layer of wax is added, followed by an additional layer of wool, and so on until sufficient thickness has been obtained.

Souttar employs a simple and efficacious technique somewhat different from that described above. The part having been prepared with alcohol, strips of ribbon gauze one inch wide are provided. These are passed rapidly through the molten paraffin, held for an instant until the edges begin to whiten, which is the sign that the correct temperature has been reached, and then firmly applied over the affected area, the strips being laid in series edge to edge.

Whichever method is employed, the after-treatment is important. After twenty-four hours, when the application is examined, it is found that the protective covering has been raised in various places by local accumulations of serum; these are punctured with a hot metal point and evacuated. A further layer of paraffin is then added, and the process is repeated when necessary.

If the burn has been in a reasonably aseptic condition a paraffin dressing may remain *in situ* for ten to fourteen days or even longer. Theoretically the original dressing may remain in place until the sloughs separate; actually, reapplications are almost invariably necessary before this aim is achieved.

The After-Treatment.

While the development of granulation tissue is proceeding and healing is advancing, care must be taken to guard against the development of contraction. Its appearance is insidious, and we have yet to perfect a method for its prevention. Much, however, can be done by massage and movement and the wearing of suitable appliances.

As soon as the granulating stage is sufficiently far advanced the raw area is grafted by Thiersch grafts or pedicle grafts, but these are details not within the scope of this lecture.

The surgeon's responsibility does not cease, however, with the application of the graft. The tendency to scarring continues, and a close watch is therefore kept upon the part, and any sign of contraction is combated by such means as massage, exercises, ionization, and cautious *x*-ray therapy.

I confess it was with a measure of trepidation that I chose the subject of this lecture. I dare say there are some of you who may have thought the subject a somewhat sterile one; I trust I have succeeded in dispelling any such opinion. A severe burn in a young child is one of life's catastrophes, and you and I can do much to avert disaster if we are alive to the possibilities.

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MINERS' NYSTAGMUS.

BY

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IN the BRITISH MEDICAL JOURNAL of April 30th (p. 809) there appeared a report of a contribution by Dr. Haldane to a discussion on miners' nystagmus, which discussion has now been going on in the *Transactions* of the Institution of Mining Engineers for over a year, and to which, through the courtesy of that institution, I contributed the opening paper; on several other occasions I had the privilege of making other remarks, the last being a reply which I made to Dr. Haldane's lecture in Glasgow on April 23rd, 1927. I will now state concisely my reasons for rejecting Dr. Haldane's defective light theory, or at any rate for holding it as not proven.

Several points demand discussion, such as the fact that the introduction of electric light has, in many pits, aggravated the disease. Then, again, his theory does not seem to explain why the disease is more frequently seen at certain periods of the year than at others. Neither Dr. Haldane nor the Nystagmus Committee takes any notice of the paroxysmal nature of the disease. A patient who has had the disease, but who has to all appearances recovered, may keep well for days or even weeks, but may then suddenly have a very severe attack. If a man has apparently recovered and is living above ground, and is not exposed again to the defective lighting, he should on Dr. Haldane's supposition keep well. As a matter of fact he is far from being immune and will certainly have subsequent attacks, some of them as severe as the first. This liability to relapse may last for years; I am now seeing cases that have been victims of the disease for five or six years. They have not been exposed to defective lighting during the whole of that time, and some of them are suffering quite acutely from the disease.

Lastly, why is nystagmus not present in all pits lit by oil safety-lamps? I am informed by a gentleman of the highest authority, Mr. G. L. Kerr, that he knows of six pits in the area in which he works in which the oil safety-lamp is used, but there is no nystagmus. Is that to be explained on the supposition that the oil safety-lamps in these pits are at all times in excellent condition and that in the others they are habitually unsatisfactory? Dr. Haldane's theory does not seem to offer any explanation.

Nor has any feasible explanation been given as to why there should be, as one of the symptoms, rotational movements of the eyes. Neither Dr. Haldane nor any of his colleagues on the Nystagmus Committee has said anything about the nerve centres which must be irritated or disturbed before the rotation takes place. In neither of the reports is there any mention of disturbance of nerve centres, nor is there any discussion as to the centres likely to be involved. The two reports are extremely disappointing. I except from that criticism, however, the work done by Dr. Haldane on the chemical side. That must be taken as authoritative. The oblique muscles must be involved in any rotational action, such as that which takes place in miners' nystagmus; their action is simply secondary to the superior and inferior recti muscles. In ordinary life they have almost no independent action of their own, yet, when there is nystagmus, the movements are chiefly rotational. To me it is absolutely unthinkable that the muscles are in violent action without any disturbance of the centres supplying the nerves to these muscles, and yet the Committee does not make any suggestions as to the nuclei and centres involved in miners' nystagmus. Because such matters are left out I think that when there is another investigation a member of the committee should be a neurologist of the highest standing.

Another feature that must be taken into account is that the disease seems to appear in epidemic form. Some years it is very frequent, in others it is not nearly so common. That is a matter which, in my opinion, should be considered by persons who are in the habit of dealing with vital statistics. The twelve months preceding the coal dispute were extremely bad; so far as the area in which

I work was concerned cases were very numerous. But for the first six months after the dispute was over there were scarcely any new cases, and my work as referee during that period was almost entirely the re-examination of miners who had been certified long before the dispute took place, some of them years before it. Now the absence of fresh cases is open to at least two explanations. In the first place we may, when the cases were very numerous, have been passing through an epidemic, or, on the other hand, the long absence from work may have been physically beneficial to the men and brought on a kind of immunity.

In the two reports issued by the Nystagmus Committee no mention is made of the chief symptom of the disease—namely, great disturbance of the innervation of the heart. I cannot help thinking that had the investigation been made by medical officers of health such a condition would have almost at once attracted their attention. Pulse rates up to 120 are by no means uncommon. The only reference I can find to the cardiac condition is contained in a report by the late Dr. Rivers, subsidiary to the first report. At page 13 of the first report the following words are to be found: "The modern teaching is that the disease is either a general fatigue of the whole oculo-motor system or a general neurosis with special local manifestations in the oculo-motor apparatus." Certainly cardiac instability is much more frequently present than rotation of the eyeballs. Why has no mention of that been made in the above definition? On page 20 of the second report we find a grouping of cases relative to compensation. The principal symptom, according to this classification, is oscillation, and we have at line 17 from the top the following words: "Oscillation is regarded as the primary sign; lid spasm, head tremor, objective giddiness, and photophobia as secondary signs." Here again there is no mention of the quick and generally weak and irregular pulse. So, too, at the foot of page 17, we have a paragraph entitled "Severity of attack on certification." This concerns the examination of 128 miners—a number inadequate to justify any conclusion. But the classification is again based on oscillation and no reference is made to any irregularity of the pulse. The failure to take notice of a condition which is one of the most prominent symptoms of the disease does not inspire me with any confidence in the thoroughness of the examinations made. Dr. Haldane's work as a chemist is, of course, of the most authoritative kind, and I take it as such, but he is not a clinician, and I do not think the clinical side of the case has been at all well done.

The late Dr. John Brownlee, certainly a man very authoritative on vital statistics, and who himself was a widely experienced and well trained clinician, said to me when we happened to meet in London on March 1st, that he had been looking into my views on miners' nystagmus and had come to the conclusion that I was probably right in saying that it was not a disease due to the illuminants used.

For the above reasons I think that a reinvestigation is necessary. The disease may be due to a toxin or to a micro-organism, but the very fact that the number of new cases recorded in one year differs very much from the number of cases recorded in another year, the differences being wide, seems to indicate that the disease is not due to illumination, for then the number of new cases occurring each year would be nearly constant.

Similarly, it is to be remarked that very little attention is given in either of the reports to the practically invariable presence of hemeralopia and nyctalopia in association with miners' nystagmus. The committee seems to have fixed its attention on one thing only—the presence or absence of eye movements—and has not even noticed what is to me the most important symptom of all, cardiac irregularity.

One or two cases have been seen in men working at the screens, not underground at all. That seems a very significant fact. I do not think the committee is in any way responsible for missing out such cases. I have not seen any myself, and I have seen many hundreds of patients with miners' nystagmus; but the few that have occurred tend to confirm my conviction that the disease is not due to defective illumination. I am an agnostic as regards the origin of miners' nystagmus, except that I feel confident that it has not been proved to be due to defective illumination. On the contrary, the evidence which I personally have got points very strongly in the opposite direction. Unfortunately, no *post-mortem* examinations have been obtained; they might have yielded good results. Pathologists and medical officers of health and epidemiologists have done a great deal to unravel many diseases, and, in consideration of the serious economic position to which the disease has given rise in the coal-mining industry of Great Britain, I think further investigations are urgently required, neurologists, public health authorities, and pathologists being called in to assist.

I shall conclude by giving a few illustrative cases.

W. B., aged 37, miner, seen on March 31st, 1927, had no trouble with his eyes till three or four days before he left off work (on March 2nd). He had been working entirely with the electric light for the preceding five years and had no symptoms whatever of the disease before he used electric light.

W. D., drawer, seen on March 31st, 1927, had worked with the oil safety-lamp till 1916, and then with the electric from 1919 till 1920. In 1925 he first suffered from symptoms of nystagmus and that very severely. For some years before the attack he had used nothing but electric light.

A. McK., aged 37, brusher, seen on April 27th, 1927. When he first suffered from the disease he was in a pit lit with electricity, and had been in it for several years; the disease began on March 19th, 1926. He was compensated till September 16th, 1926, but was unable to get work till March 29th, 1927, and then he obtained employment in a pit which was particularly well lit with electricity. In this case there does not seem to be any history of his ever having worked in a pit lit by oil safety-lamps.

J. B., aged 21, brusher, seen on May 2nd, 1927, had been in coal pits for seven years. He began in one pit which was chiefly lit by electricity, but in which oil safety-lamps were sometimes used. He was for four and a half years in that pit and then moved to another lit entirely by electricity. He was in this second pit for fully three years, and first noticed symptoms six weeks ago. He saw objects rotating in front of him.

R. C., a miner, aged 47, seen on May 2nd, 1927. The symptoms in this case began not more than a year ago. He is quite clear on that point. He has been using nothing but electric light in the pit for three years. He expressed the opinion that electric light is extremely bad for eyesight.

J. C., a stone miner, aged 42, seen on May 5th, 1927, had been in various pits. I will distinguish each pit by a numeral. He began mining at the age of 14 in pit number 1, a naked-light pit. He was there a year and then removed to pit number 2, which, at that time, was worked with oil safety-lamps. He was there for about twelve or thirteen years, and during that time had no trouble with his sight. Then he removed to pit number 3, where he was only twelve months, still using the oil safety-lamp and still without any trouble. Then he went to pit number 4, where he used sometimes an electric head lamp, and on other occasions an oil safety-lamp. The oil safety-lamp was carried only as a protection; he used the electric light for working. He was in this pit for about thirteen years and, for the first time, while working with the cap electric lamp, felt some symptoms of the disease. Then, about two years ago, he went to pit number 5, entirely lit with electricity. He states quite distinctly that for coal mining the oil safety-lamp is much superior to the electric because it gives less strain to the eyes.

T. G., a miner, aged 55, seen on May 5th, 1927, began in a naked-light pit at the early age of 12. He was only two years there when he went to another pit, where he remained for nineteen or twenty years. This second pit was entirely lit by oil safety-lamps, and he had no nystagmus nor had any trouble of the eyes; two and a half years ago he went to a pit lit throughout by electric light. After being some time in this pit he felt his eyes and head beginning to trouble him. There was intense pain, chiefly at the back of the head, but frontal pain also. The important points in this case are that the patient was for twenty years in an oil safety-lamp pit without having the disease, but had it after he had been three years in an electrically lit pit.

T. K., aged 44, brusher, seen on May 5th, 1927, felt no inconvenience with his eyesight down to the beginning of the strike of 1921. Shortly after resuming work he for the first time noticed defects. The first symptom was that everything appeared in motion at the bottom of the pit. The lamp at that time was the oil safety-lamp. He took a lump sum of money in 1922. He does not seem to have begun work till a considerable time afterwards, and first began with work above ground. Ultimately he went to an electrically lit pit, and was only able to stand the bright light for five weeks, when he again became severely ill with the disease and had once more to apply to the certifying surgeon.

These are only a very few cases taken within the last six weeks. I have records of many hundreds of cases, but the above will, in the meantime, I think, answer my purpose, which is to show that electric light is by no means a preventive of miners' nystagmus. Not infrequently it is found that men who have worked for many years with a moderate amount of nystagmus in pits lit by oil safety-lamps have been attacked very severely by the disease on

the introduction of electric light. There is no gainsaying these facts. No doubt we may be told that it is because the best type of electric lamp has not yet been procured, and the coal owners may be called upon to face further great expense on that head. I think that, before any such demand is made of them, there should be a much more thorough investigation into the cause of the disease, which investigation would include a well organized collective investigation throughout the entire coal-fields of the United Kingdom. Such a research ought unquestionably to be in the hands of persons competent to deal with vital statistics and with public health.

MINERS' NYSTAGMUS.

NOTES FROM THE SOUTH WALES COAL-FIELD.

BY

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CARDIFF.

MINERS' nystagmus continues to be a cause of much concern, both to workmen as a disabling event in the life of underground workers, and to their employers as an economic factor. It is one that exhibits itself in different ratios among men employed in different places, and it has some connexion with coal and the variations in gaseous contamination of mine air. This fact is brought into prominence by the high incidence of the disease in parts of the coal-fields where a kind of coal that has much volatile matter in its composition is worked. The fact that more cases take origin in certain coal seams than in others should induce authorities to inquire into the composition of those kinds of coal in which highest and lowest incidence of nystagmus is observed. The number of men affected with the disease in each pit or district chosen should be ascertained, and compared with the total number of men employed in these areas. The introduction of electric lamps has not brought about the much desired result; it has not diminished the number of cases, and such lamps may have actually induced the condition in cases that were quiescent, or aggravated it in others that were evident both to the man and the medical examiner. The time has more than arrived when other possible causes should be inquired into. These are pit environments and the condition of the air at the coal face, the gob, the workings, the main roads, and the return airways. In all of these situations cases of nystagmus arise. In some pits, possibly in most, the collier is the workman who suffers most, but there are seams in which cases of nystagmus arise in parts distant from the face, and show an equal percentage with face workers. In a series of years ending in 1926, out of thirty-two protracted cases contracted in South Wales, 75 per cent. occurred in miners, and 25 per cent. in four other grades. Doctors practising in different parts of the coal-fields differ in their conclusions as to whether the disease is or is not present, and are often at variance with medical referees in this respect. Clinically miners' nystagmus is a very complex condition to diagnose, and to determine whether it has ceased so that the man is fit for work. It is no easy matter either for him or for his doctor to decide this point.

The evidence, so far as it goes, indicates that some pathological entity exists around which many signs and symptoms revolve; in the schedule of disease (III) of the Workmen's Compensation Act, 1925 (No. 17), it is defined as "The disease known as Miners' Nystagmus, whether occurring in miners or others and whether the symptom of oscillation of the eyeballs be present or not." This definition makes for trouble in diagnosing the disease on its kaleidoscopic manifestations; hence the differences in medical opinion expressed at examinations. The disease may manifest the presence of oscillation of the eye, and this movement definitely determines its existence, but subjective symptoms, such as headache, giddiness, and loss of orientation, may be all that is complained of—that is to say, subjective symptoms without objective signs may be the chief determining characteristic; and this is how the fallacy in diagnosis arises.

In the South Wales and Monmouthshire coal-field in 1925, among 157,473 men of all grades above and below ground, there were 621 cases of nystagmus, or nearly 0.4 per cent. In 1926, for 153,738 men so employed (for five months only, owing to the cessation of work in the coal-field), the number of cases of nystagmus was 263. The estimated number for twelve months would have been 631, so that in 1926 more cases might have been expected to arise than in 1925, though the number employed was fewer by 3,735.

A study of the results of the examination of cases by colliery doctors in this coal-field reveals many facts of interest, such as high blood pressure, chronic nephritis with albuminuria, rapid heart, constant headache in some area of the head, the occurrence of the disease after head injuries not found before such injuries, and many years' standing of some cases, with no evidence of amelioration of signs or symptoms though the men had not resumed pit work. Resumption of work and renewed failure on many occasions is frequently reported. Men at the pit bottom with good light may suffer; one-eyed men get nystagmus. Chief among the signs accompanying oscillation may be photophobia, blepharospasm, conjunctivitis; head tremors alone may replace eye tremors and completely disable the man so suffering. Central vision varies in different cases, and many other defects may accompany the involuntary oscillation of eyeballs which is the chief determining characteristic.

No Act of Parliament can define the degree, range, or definition of the disease—for example, head tremors, which may be the only evidence of the disease, are not included in the schedule of signs. No special inquiry, as far as I know, has been made as to the association of labyrinthine nystagmus with miners' nystagmus, yet it may complicate the pure forms of oscillation. The man as a whole should be examined, as the eye is simply the outpost of the commonwealth of his being. Hereditary predisposition does not, I think, count in the genesis of the disease, but a poor nervous endowment does. The history of men who resume work underground and fail repeatedly should be investigated, since some proclivity to the disease may be disclosed in the man, such as the red corpuscle ratio, or it may turn out that the causative agent is something in the environment. It would be in the men's interest to have all boys examined at 14 years of age, before beginning pit work, so that the weedy ones might be induced to give up the idea of engaging in an occupation so hazardous as mining. Physical robustness should be the standard of acceptance. Some doctors consider that this condition is a form of neurosis from the beginning, and that the special nervous symptoms are secondary. In all neuroses there must be some physiological nutritional derangement of function of brain cells, and such defects may arise where the air is less life-supporting than the healthy stimulus of light and fresh air in the open spaces above ground.

The average duration of cases of nystagmus is uncertain, and cannot be defined in terms of months or years. Some colliery doctors declare that when nystagmus (oscillation of eyes) has once definitely arisen it will reappear on resumption of work underground. There is a good deal to be said for this opinion—that is to say, "once nystagmus always nystagmus." Again, in some instances men have resumed light work on the surface and failed, although they had not restarted work underground. This fact indicated to my mind that the disturbance to the central nervous system is well defined and likely to be permanent.

Some men do resume work underground and do not again suffer from nystagmus. Such men have on my advice been placed on the fresh-air side of the pit, where there is comparative freedom from deleterious environment, but the same safety-lamps are used. Considering the absence of correlative evidence of doctors' reports on nystagmus it is urged that some definite and exhaustive syllabus of its range, including both signs and symptoms, should be published by the Government advisers relative to mines and the diseases arising therein.

Incidentally it may be mentioned that beat-knee has become almost as prominent in some pits as nystagmus, and is steadily growing in ratio to men employed underground. The opinion of medical men of equal experience and ability

varies within considerable limits as to the diagnosis of nystagmus; County Court judges are also much perturbed in such cases. All these facts indicate that some authoritative definition of the disease and its many phases is urgently required.

Whatever opinion is held as to the causation of nystagmus the pathological entity round which this complex revolves is involuntary oscillation of eyeballs, and that, in my opinion, cannot be explained away on a psychological basis. To the elucidation of the cause of this defect in the miner the expert coal chemist should add his quota to that of the doctor.

ACUTE PANCREATITIS: A METHOD OF TREATMENT.

BY

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THE careful study of acute pancreatitis by Mr. Hamilton Bailey in the JOURNAL of February 26th (p. 367) recalls my own experience. The chief difficulty in diagnosis arises from not having the condition in mind. I remember well my first experience of this. When engaged with out-patients, I was asked by the house-surgeon to see a case of acute intestinal obstruction just admitted for immediate operation. After examination I came to the conclusion that the case was not intestinal obstruction, but what exactly it was I could not say with certainty. I concluded, however, that the symptoms and signs indicated peritonitis limited to the lesser sac, and that the most likely cause of this was probably a small perforation of the posterior surface of the stomach, although there was no history of previous stomach trouble. When the abdomen was opened the patches of fat necrosis at once proclaimed the pancreatic lesion, which, till then, I had not taken into account.

Surgical writers, of course, advise drainage of the pancreas, and the various anatomical routes of approach to the organ are described. But they are reticent as to what should be done with the pancreas. Many writers appear to imply that it is enough if a drain is introduced down to the pancreas, and the inflammatory exudate present in the lesser peritoneal sac thereby permitted to escape, with precautions against infection of the general peritoneal cavity. But surely that is not enough. The condition of a patient with really acute pancreatitis is desperate; the gland is acutely congested, swollen, and tense, and appears on the high road to total gangrene. The patient is profoundly toxaemic, slowly dying from the absorption of poisons from his pancreas. The obvious indications for treatment are to stop absorption, to relieve tension, and to allow free exit of inflammatory products so that any part of the gland not already dead may have the best chance of recovery. General treatment of a supporting nature will, of course, not be neglected. It appears to me that the only way to fulfil those indications is freely to open up and drain the gland itself. That this can be done with safety and immediate benefit to the patient the following case—the first on which I used the method—will show:

I was called to see a man, aged 30, about 7 o'clock one morning in the early part of 1915. He was healthy, not fat, but given to bouts of drinking, and he had been indulging a few days before I saw him. It was a typical case of acute pancreatitis, and I sent him at once into the Oldham Royal Infirmary, and four hours later, about five hours from the commencement of his illness, opened the abdomen by a median incision. The pancreas was reached through the gastro-colic omentum. It was greatly swollen and deep purple, almost black in colour. My problem was to lay open the glandular tissue freely so as to drain the whole organ efficiently, and to do this without causing undue haemorrhage or infecting the general peritoneal cavity. I snipped through the peritoneum on the anterior surface of the pancreas, and pushed a finger well down to the middle of the swollen gland. I then worked the finger from one end of the pancreas to the other, allowing it to some extent to follow the path of least resistance, so that eventually there was a kind of trench along the anterior surface of the gland, extending from head to tail, and rather nearer the upper than the lower border so as to avoid injury to the duct of Wirzung. From this longitudinal trench short lateral branches or diverticula were made at intervals by pushing the finger into the gland tissue, especially at places where it felt softened. The bleeding was free but not excessive, and was easily checked by a temporary gauze pack in the trench. A wide-bore rubber tube was passed down to the pancreas, the gastro-colic omentum snugly adjusted round it with the aid of a stitch, the upper part of the tube wrapped in gauze to shut off the general peritoneal cavity, and the abdominal wall closed above and below the tube. The wound was dressed daily and the pancreas gently mopped through the tube. The patient made good progress without interruption. Five days after operation two sloughs of pancreatic tissue were discharged, each about the size of a walnut. The tube was kept in for about a week and thereafter the wound healed soundly and quickly. No sugar appeared in the urine during his stay in hospital. Some months later he joined the army, served in France, and continued in good health.

I have used this method, or assisted colleagues in using it, in three cases of acute pancreatitis, all of whom recovered. The number is small but quite sufficient to demonstrate that the inflamed pancreas can be freely opened up and drained, not only with safety, but with immediate and lasting benefit to the patient.

AN OPERATION FOR HALLUX RIGIDUS.

BY

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DISSATISFACTION with the functional end-results of the ordinary operations for hallux rigidus has induced me to try what has proved to be a simple, but effective, substitute. When one of the ordinary operations, such as removal of a wedge of bone limiting dorsiflexion or the trimming away of a portion of the head of the metatarsal, is practised, an elastic resistance to dorsiflexion still remains. This is due to the shortened and contracted structures on the plantar aspect of the metatarso-phalangeal joint, particularly the plantar fibres of the lateral ligaments. The spasm of the intrinsic muscles of the great toe, whose tendons are inserted into the base of the proximal phalanx, is also a factor. These features, together with the organization of blood clot and the development of painful adhesions, are responsible for poor functional end-results.

The difficulty being largely and very often wholly extra-articular, it seemed illogical to attack the bony and cartilaginous elements of the joint. An operation was planned, therefore, to divide the shortened structures on the plantar aspect of the joint.

In the first case chosen there was no osteo-arthritis of the metatarso-phalangeal joint, but the rigidity could not be corrected by forced manipulation under the anaesthetic. It seemed eminently suitable, therefore, for what might be termed this intermediate type of operation. A longitudinal incision, one inch long, with its centre over the level of the articulation, was made in the mid-line over the plantar aspect of the metatarso-phalangeal joint of the great toe. The sheath of the flexor longus hallucis was incised in the line of the skin incision and the tendon hooked aside. A strong, narrow-bladed knife was then passed into the joint to divide the capsule on its plantar aspect, along with the tendons of the small muscles attached to the base of the proximal phalanx. The plantar fibres of the lateral ligaments were also divided. Dorsiflexion, full and free, was obtained. The toe was bandaged in moderate dorsiflexion. Active and passive movements were begun on the third day. Full function was present by the time the stitches were removed and full weight-bearing begun on that day.

The operation has been done in a series of twelve cases with equally gratifying results. The patients have all expressed themselves as satisfied and there have been no relapses. Osteo-arthritis was present in three, and a wedge of bone, base upwards, was removed from the dorsal aspect of the joint. An elastic resistance to full dorsiflexion still remained, but disappeared at once on the performance of the small additional procedure here described.

Most cases of hallux rigidus occur in slender feet with a relatively long great toe, and attention must, therefore,

be paid to the fitting of a suitable shoe that is not too short. Measures must also be taken for the treatment of a tendency to faulty statics and flat-foot, which it is usual to find associated with hallux rigidus, and which are concerned in its causation.

TWO CASES OF SPONTANEOUS RUPTURE OF THE HEART.

BY

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IN a recent article on rupture of the heart, J. Strickland Goodall and H. B. Weir,[1] after analysing a series of cases, express the opinion that a physical pathological state, and not some emotional strain, is the prime causal factor. The two cases here described corroborate that conclusion, and in addition appear to be of interest, in one case because of the unusual site of rupture, and in the other on account of the unusual nature of the pathological cause of the rupture.

CASE I.

A woman, aged 53, was admitted in April, 1918, in a restless, excitable condition. In April, 1920, she had crossed paralysis of the right arm and left leg, with slight facial paresis, but consciousness was not lost. She was up and about in December, 1920, and continued to lead a quiet, aimless life, doing no work of any description. There was evidence of myocardial insufficiency shown by slight oedema of the lower extremities. On April 11th, 1922, the patient was taken ill at 8.40 a.m. (one hour after rising), and expired almost immediately. There was a suspicion that the patient had recently visited the lavatory, but we were unable to get any definite evidence on this point. It is to be noted that in Goodall and Weir's series of eighteen cases three occurred in connexion with visits to the lavatory, the strain of defaecation apparently being the effort which precipitated the final catastrophe.

The autopsy revealed signs of passive congestion in all the viscera. The oedema of the legs was still noticeable. The cranial cavity contained an excess of cerebro-spinal fluid, ventricles were dilated and the convolutions wasted. The pia mater was thickened, and there was an area of old softening in the motor area of the left cerebral hemisphere. The pericardium was distended by blood and blood clot. The right auricle was dilated, and showed a large tear posteriorly, about 4 cm. in length. The edges of the rent were ragged, irregular, and ecchymosed. The heart muscle was soft and flabby, and there was considerable sclerosis of the coronary arteries. The heart weighed 266 grams.

CASE II.

A man, aged 62, a shoemaker by trade, was admitted in June, 1906, in a state of noisy excitement with acute hallucinations of sight and hearing. For many years prior to his death he had been in a state of progressive dementia, confused, idle, solitary, and unresponsive. He was known to be the subject of cardio-vascular degeneration. His death occurred suddenly one morning, whilst still in bed.

The autopsy revealed a large flabby heart, weighing 420 grams, the pericardium again being distended with blood and blood clot. The left ventricle was found to be ruptured posteriorly, the external opening of the rupture being about 2 cm. ong. It resembled a clean-cut surgical incision, and ran in a direction parallel with the muscular fibres. Further inspection of the site of the lesions showed that the ventricular wall was diffusely affected by a gummatous condition. The tear on the inner surface of the ventricle showed ragged edges, and the haemorrhage had extended laterally for some distance in the wall of the ventricle. On one side it had pursued a U-shaped course, and had almost penetrated again into the ventricular cavity. The coronary arteries were sclerosed, and in the aorta were patches of atheroma sharply limited to the points of origin of the intercostal arteries. A feature of interest was that the thymus had not undergone its usual atrophic changes, but extended downwards as far as the base of the heart.

It is possible that rupture of the heart is a more common mode of death in cases of cardio-vascular degeneration than is commonly believed. Neither of the deaths here recorded could be said to be unexpected, and it is certain that in the absence of permission for a *post-mortem* examination no difficulty in assigning a cause of death would have been experienced, and the ruptures would have been undiscovered. The strain in Case i was at the most a physiological one, and in Case ii the entire absence of any strain is noteworthy. Auricular rupture is uncommon, for while it is conceivable that degenerative processes may occur in the wall of any of the chambers of the heart, it is obvious that the walls of the ventricles will be more likely to rupture on account of the extra strain to which they are subject. Quain,[2] in a summary of cases collected from various sources, gives the frequency of sites of rupture as: left ventricle 76 times, right ventricle 13 times, right auricle 7 times, left auricle twice; the interventricular septum was ruptured in four cases. Elleaume,[3] quoted by Quain, found the right auricle ruptured in 3 out of 55 cases. The age of both our cases was over 50, as it was in over 80 per cent. of the recorded cases. Syphilis of the heart is well known as a cause of sudden death, and cases of rupture reported by Dandridge and Nalty are mentioned by Osler.[4] Stott and Blair,[5] in a recent article, note the apparent predominance of the female sex in cases of ruptured heart. From an examination of the records of a large number of cases it would seem that the reverse is true, although not to the extent of the predominance of male cases recorded by Strickland Goodall and Weir (16 male to 2 female).

We are indebted to the medical superintendent of the hospital, Dr. R. P. Sephton, for permission to record the foregoing cases.

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SPONTANEOUS RUPTURE OF THE RIGHT VENTRICLE OF THE HEART.

BY

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THE following case shows several unusual features, which are worthy of record.

An unmarried woman, aged 57, was admitted to the Essex County Hospital, Colchester, complaining of a swelling of the abdomen, first noticed one month before admission. It was causing slight abdominal discomfort, and there was some oedema of the legs, most marked at the end of the day. There had been no nausea or vomiting, and no jaundice. She had dyspnoea on exertion, but no cough, no difficulty of micturition, and no cramping pains in the legs. She had been losing weight for the previous two months. Menstruation had ceased at the age of 48, but there had been a slight "show" four months previously.

There was impairment of the percussion note at the bases of both lungs, presumably due to the liver being pushed up by the abdominal contents; otherwise, the lungs appeared healthy. The apex beat was in the fourth space, 2¾ inches from the mid-sternal line. The impulse was poor, and the area of cardiac dullness was not increased. The first sound at the apex was very faint and prolonged; the other sounds were faint, but no murmurs were heard. There was some oedema of the legs and lower part of the back.

The abdomen was distended, and the umbilicus protuberant. There was marked shifting dullness in the flanks; a fluid thrill was perceived on palpation. In the right hypochondrium there was a mass the size of a foetal head, hard, fixed, and apparently smooth. In the left hypochondrium there was a smaller mass, the size of a Tangerine orange, which could be pushed easily towards the mid-line. The liver was apparently pushed up by the abdominal contents. The spleen and kidneys were not palpable. The uterus was small, senile, and freely movable, and the cervix was healthy. The mass on the right side was free from the uterus; that on the left, from its mobility, was thought to be a subperitoneal fibroid. The urine was normal chemically and microscopically, and the Wassermann reaction was negative. A diagnosis of right-sided ovarian cyst, with free ascitic fluid, was made, and a pedunculated fibroid was suspected. About two hours before the contemplated operation, after the usual routine preparation of the abdomen, the patient complained of sudden nausea and slight precordial pain. She tried to sit up in bed, but collapsed. Her face was pale and clammy, but there was no cyanosis; she became unconscious in about five minutes, and died about ten minutes after the onset of the symptoms.

At the necropsy death was found to have been due to a rupture of the right ventricle. The lungs were compressed, and congested at the bases; there was no evidence of pulmonary embolism. The pericardium was full of blood. The heart was small, and was coated with bright yellow fat, which also covered the aorta. At the apex of the right ventricle there was a definite perforation, the size of a small knife-stab. The musculature of the heart generally, was extremely thin, that of the apex of the right ventricle practically consisting of the endothelial lining of the heart, with an outer covering of about three-quarters of an inch of fat. The walls of the auricles were exceptionally thin. The aortic valves showed slight atheromatous changes, but the other valves were normal.

The peritoneum contained a large quantity of dirty green fluid with flakes of free lymph; there were no miliary deposits. The

intestines were collapsed. The liver showed a state of mild cirrhosis; on microscopical examination there was found an increase of fibrous tissue around the bile ducts, with partially obliterating endarteritis of the vessels. The spleen, uterus, and appendages were normal, but the kidneys were slightly granular. There was a typical broad-ligament cyst on the right side, of irregular shape; it passed across the bladder, with a small protuberance causing the apparently separate mass on the left side. On section it proved to be an innocent multilocular growth, with papillary proliferations.

This case has several features of interest. The muscular effort which ruptured the heart must have been very slight, as the patient was lying in bed. She was by no means a nervous woman, and was perfectly willing to be operated on for her condition. The right ventricle is said to be affected in only one quarter of these rare cases of rupture of the heart, the left ventricle being the usual chamber involved. The slight degree of precordial pain, and the comparatively long duration of life after rupture, due, no doubt, to its small size, add interest to a very unusual case.

My thanks are due to Dr. S. W. Curl for permission to publish this case, and for his help in compiling these notes.

TREATMENT OF RINGWORM BY THALLIUM ACETATE.

BY

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SINCE reading the report in the BRITISH MEDICAL JOURNAL of February 19th (p. 329), I have taken the opportunity of investigating the treatment of ringworm of the scalp in children at the Withington Hospitals, by the internal administration of thallium acetate. The cases were taken at random among children up to 5 years of age, no consideration being given to the extent or duration of the disease.

In all cases the urine was ascertained to be free from albumin, albuminuria being a contraindication to the use of the drug, and in all cases a positive spore test had been returned before treatment.

The dose of thallium acetate given was 1/8 grain per 2¼ lb. of body weight, irrespective of age. The drug is easily soluble, and was made up in sweetened water and administered in a single dose. No constitutional symptoms were observed after the administration of the drug, nor yet in the case of one child who received a second administration six weeks later. No local treatment was applied to the scalp, but the head was covered to prevent loose hairs being a source of infection to other children. The shedding of hair commenced between the fourteenth and sixteenth days. The hair could then easily be pulled out without causing any discomfort, and it also came off in the caps. The shedding was in every successful case complete in from three to six days. The very short stumps were found to be loose, and were readily extracted by application of adhesive plaster for a few minutes. The action of the drug was entirely selective to the hair of the scalp.

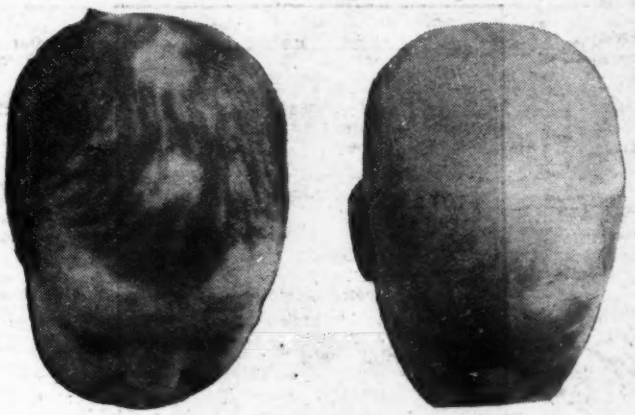
In all cases a roughness of the extensor aspects of the forearms and of the outer side of the legs was observed about the tenth day after the administration. After the shedding of the hair dermatitis of the scalp occurred in several cases, but yielded to treatment by zinc ointment in the course of a few days. The new hair commenced to grow almost immediately.

Case 1.—A boy, aged 4 years, presented several patches of ringworm of the scalp; he had been treated for over six months by various local applications. The child's weight was 2 st. 2 lb. 12 oz., so 1.7 grains of thallium acetate was given on March 22nd. Epilation commenced on April 6th (sixteen days after) and was complete in six days. He has now quite a fair crop of hair, and spore tests from different parts of the scalp are negative.

Case 2.—A child, aged 1 year 8 months, weighing 1 st. 8 lb. 2 oz., was given 1.23 grains of thallium acetate; the shedding of hair began on the fifteenth day and was complete in five days.

Case 3.—A child, aged 2 years and 8 months, weighing 1 st. 13 lb. 6 oz., was given 1.52 grains of thallium acetate; the shedding of hair began on the fifteenth day and was complete in five days.

In Cases 4, 5, 6, and 7 shedding of the hair commenced on the fourteenth day and was complete in three days. Photographs of one of these cases are reproduced; the age of the patient was 3 years and 6 months, and he weighed 2 st. 3 lb. 4 oz. A dose of 1.74 grains of thallium acetate was given on April 23rd, and the



shedding of the hair commenced on May 6th. In Case 8 the child, aged 2 years and 4 months, and weighing 1 st. 12 lb., was given 1.5 grains of thallium acetate. The shedding of hair commenced on the sixteenth day and was complete in six days.

Out of the first ten cases two were unsatisfactory; one was a failure for which I cannot account, as shedding of the hair occurred only very slightly, and the other was unfortunately given an underdose, and shedding of the hair was only partial.

The results of these few cases suggest that there is wide scope for the use of thallium acetate, especially in children under the age of 3, where *x*-ray epilation is inadvisable.

I have to thank Dr. Gibson, the visiting dermatologist, for his interest and help in these cases, and also Dr. Gamble, the medical officer, for permission to report them.

[The reader is referred to a paper on this subject by Professor W. E. Dixon, communicated to the Section of Dermatology of the Royal Society of Medicine on March 17th, and published in the current (June) number of the *Proceedings* of the Society (p. 1197). An annotation of this paper appeared in the JOURNAL of March 26th at page 581.]

CARDIAC FAILURE ASSOCIATED WITH NEW GROWTH IN THE CHEST.

BY

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THE following case has interesting features and seems worth recording, as the presence of mitral stenosis, together with a new growth in the chest causing acute symptoms simultaneously, must be exceedingly rare.

The patient, a man aged 41, gave a history of becoming easily fatigued for twelve months, and swelling of the legs and arms for four months. He stated that the oedema in the right arm had always been greater in amount than that in the left.

On admission he was very dyspnoeic and cyanosed. He was coughing up a fair quantity of sputum, which was slightly tinged with blood. There was a considerable amount of oedema—of both legs, the scrotum, and both arms (of which the right was much more swollen than the left). The other signs of cardiac failure present included enlargement of the liver and spleen, a small amount of fluid in the abdomen, and congestion at the bases of both lungs. The urine had a specific gravity of 1020, and contained both albumin and blood.

The physical signs in the chest may be summarized as follows: The heart was enlarged, the right border being half an inch to the right of the sternal margin and the left two inches outside the nipple line. At the mitral valve there was a localized presystolic and a soft systolic murmur. The aortic and pulmonary sounds were normal. It was also noticed that the right apex was less resonant to percussion than the left, and that at this side the breath sounds were distinctly weaker. Enlarged superficial veins were present on the right side of the chest.

The conclusions were that the patient was suffering from cardiac failure due to mitral stenosis, and that there was something in the neighbourhood of the right apex which was partially obstructing the innominate vein. An *x*-ray photograph of the chest was not taken until a later date owing to the gravity of the symptoms.

The cardiac condition was treated by the usual measures; these included rest in bed, venesection, Southey's tubes and incisions into the right arm, and the administration of Nativelle's digitaline and diuretin. After twelve days' treatment there was a marked improvement in all his symptoms, but the oedema of the right arm persisted.

At this stage an *x*-ray photograph of his chest was taken, and Dr. F. C. Jagger made the following report: "There is a rather dense shadow under the right sterno-clavicular joint, which has the appearance of a new growth."

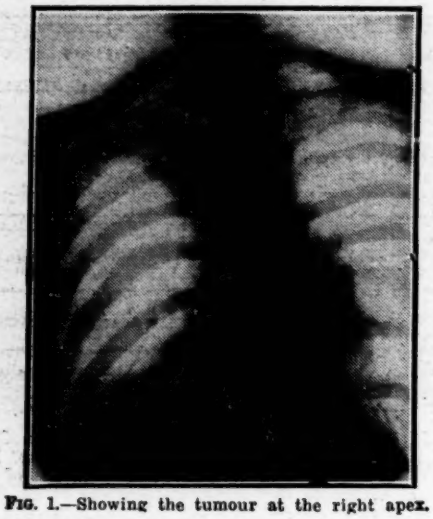

FIG. 1.—Showing the tumour at the right apex.

The Wassermann reaction was negative. It seemed probable, therefore, that the tumour was of the nature of a lympho-sarcoma.

A course of *x*-ray treatment was instituted. Twelve B-pastille doses were given in all, six to the front of the chest and six to the back, in the neighbourhood of the tumour. Under this treatment the tumour soon began to show signs of shrinkage, and the oedema of the right arm gradually disappeared.

The patient is now feeling perfectly fit. His mitral condition appears to be well compensated, and there are no physical signs of a tumour in the chest. Further, the

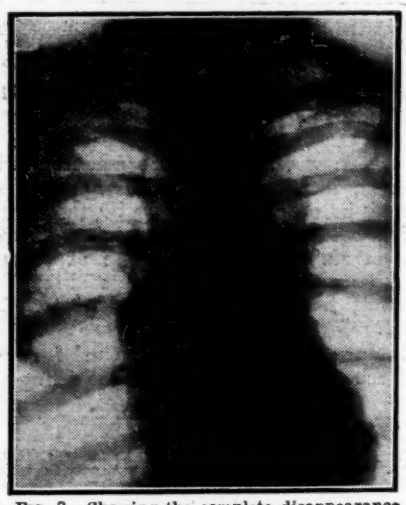

FIG. 2.—Showing the complete disappearance of the tumour after treatment.

x-ray photograph shows that the tumour has completely disappeared, although a secondary deposit of lympho-sarcoma may occur later on.

I am indebted to Dr. G. A. Tullis for permission to publish this case, and my thanks are due also to Dr. Jagger for kindly reproducing the *x*-ray photographs.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE LOBAR PNEUMONIA: DEATH IN NINE AND A HALF HOURS.

THE following case is worthy of record, in that the whole course of the illness, from the initial rigor until death, lasted only nine and a half hours.

Mrs. T., aged 90, was taken ill and had a severe rigor about 2 p.m. one day during snowy weather. She had been up and about as usual during the morning. She was put to bed and given hot drinks, and some few hours later her relatives found difficulty in wakening her. When I saw her at 5.15 p.m. she was very drowsy and only muttered when spoken to. The pupils were equal and reacted to light. There was no sign of paralysis in any limbs. When she coughed she brought up the typical blood-stained, "rusty" sputum of pneumonia. The base of the left lung was dull on percussion and the breathing was definitely tubular in character. Few adventitious sounds were present. The temperature was 105° F. and the pulse was 120.

I saw her again at 9.30 p.m. when she was quite unconscious, and I verified the diagnosis of lobar pneumonia by further examination. There were no signs of any cerebral lesion. The temperature had fallen to 103° F., but the pulse rate had increased to above 130 with some irregularity. The patient died at 11.30 p.m.

She had been a very healthy old woman considering her great age, but during the last few years had had several fairly severe attacks of acute bronchitis from which she recovered well. During the last twelve months she required no medical attention.

It is of interest to note that the onset was not of the insidious type usually associated with the aged; the rapid course of the illness indicated that the resistance to the infection was practically *nil*.

Manchester. RICHARD I. POSTON, M.D.

INTESTINAL OBSTRUCTION DUE TO TORSION OF THE MESENTERY.

THE following details of a case of intestinal obstruction caused by mesenteric twisting seem to be worthy of record, since such torsion must be a very rare cause of obstruction.

A male Hindu, aged 28, was admitted to the Monghyr Sadr Hospital for acute intestinal obstruction, which had lasted five days; his condition was almost hopeless. The tongue was dry and brown, the breath very foul, the eyes were sunken, the abdomen was distended and tympanitic, and the pulse was feeble. (Lejars aptly described this condition as stercoraemia.) He had faecal vomiting, and gave a history of absolute constipation for five days, not even flatus having passed. Enemas had been given without result. It was decided to operate at once; a rectal injection of ten ounces of glucose solution was given and was retained.

After a preliminary morphine and atropine injection and lavage of the stomach the abdomen was opened under general anaesthesia. The first glimpse of the coils of the small intestine which came into view was very striking; they were deep purple in colour and were beginning to lose their glistening appearance. Some coils escaped from the wound, a few more were pulled out and covered with hot towels. The peritoneal fluid was foul-smelling. The pelvic colon and caecum were not distended, and, from the pre-gangrenous state of the whole of the small intestine, I suspected some mesenteric abnormality. After enlarging the wound and pulling out some more coils of small intestine the mesentery came into view and was clearly seen to be twisted on itself from right to left. More of the small intestine was eviscerated, and I was able to untwist the mesentery just over one turn. There was still another complete twist, but further progress was checked by a loop of the ileum being firmly held down to the posterior abdominal wall above the level of the caecum. Owing to its depth and the bad light, I could not see what was binding down the ileum, but it felt like a twisted cord, as thick as a thumb. While investigating this area gently the gangrenous gut at the seat of constriction perforated, and foul faecal fluid began to pour out of the gut into the right flank. A piece of gauze was pressed down upon it, and a pair of intestinal clamps was immediately applied; the faecal matter was then removed. Excision of any or of the whole length of the gut was out of the question owing to the bad light, the state of the gut, and the condition of the patient. A stab wound was made through the right flank, another pair of clamps was passed through this and placed alongside the first one, which was then removed. This clamp served also to keep open a passage for drainage. Through a small opening in a loop of jejunum a medium diameter rubber drainage tube was passed and fixed by two purse-string sutures. The loop was fixed to the upper part of the wound, the rest of which was closed quickly. Gentle lavage of the jejunum was tried after the patient had been returned to bed, but with only temporary success, the patient dying later. This procedure could hardly have been expected to succeed, but if the patient's condition had improved after drainage another attempt might have been undertaken next day to resect the ileum.

I have found no mention of this condition in any of the standard books on surgery by British authors; thrombosis and embolism of the mesenteric vessels and tumours at the root of the mesentery are described, but not torsion. So far I have only been able to find a description of a similar case by Pierre Delbet, who describes the condition as "Occlusion intestinale par torsion de la totalité de l'intestin grêle et de son mésentère" in the *Bulletin et Mémoires de la Société de Chirurgie*, 1920.

Delbet was more fortunate with his case, for he was able to free the lower loop of the ileum from the posterior abdominal wall by eviscerating and untwisting the whole of the small intestine. My further progress in that direction was checked by this anchorage, so that neither complete evisceration nor complete untwisting could be performed. As no *post-mortem* examination was allowed the cause of this anchorage still remains a mystery. Delbet's description of a peritoneal fold and another loop holding the ileum down is rather unintelligible, and I should be glad to be enlightened by anyone who has had experience of such a case. The direction of this twist, both in Delbet's case and in mine, seems to have been from right to left, so that the gut had to be untwisted from left to right.

Chapra, India. A. N. PALIT, F.R.C.S., Major I.M.S.

DISSECTION OF TONSILS.

THE great majority of tonsils can be completely removed by the inverted guillotine method. There is, however, a comparatively small proportion which cannot be satisfactorily removed by this method and must be dissected out by knife, scissors, etc. This can often be done under local anaesthesia, but there are cases which, for one reason or another, require a general anaesthetic. In these cases considerable difficulty often arises from interference with respiration, haemorrhage, etc., and it is for such cases that the method here described offers a comparatively simple and safe means of treatment.

The patient is anaesthetized in the usual way and an intratracheal flexible metal catheter is introduced through the larynx and chloroform anaesthesia maintained automatically by the patient himself. (A No. 16 catheter is used for adults and a No. 12 for children.) A Doyen's gag is introduced and the lower pharynx packed with gauze. A broad tongue depressor is passed back to the pharyngeal wall and depresses and keeps in position both the tongue and the gauze packing. This gives an excellent view and approach to the tonsil fossae.

It is now a simple matter to dissect the tonsils out of their beds and efficiently control and arrest haemorrhage. The use of a suction apparatus, for the removal of blood from the throat, facilitates the operation. There is no anxiety about respiration. The free airway through the intratracheal tube lessens congestion, and bleeding points can be secured and tied off at leisure.

I believe this to be a "new" technique, for, although I have used intratracheal chloroform for many years for nasal and throat operations, I have only recently tried it in cases of tonsillectomy, and I do not remember having seen it described elsewhere.

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BLOOD TRANSFUSION IN HAEMORRHAGIC DISEASE OF THE NEWBORN.

THE following case affords another illustration of the value of immediate injection of whole blood in arresting melaena neonatorum.

A female infant born on April 5th, 1927, at 4 p.m., after an easy and normal delivery without intervention, was cyanosed, but after clearing the throat of mucus it cried lustily and breathing and colour were soon quite normal. It weighed 6 lb. 2 oz.

At 8 o'clock the following morning (6th) it vomited some clotted blood and passed a small black stool; otherwise it appeared quite normal. I saw the child at 10 a.m., and except for the above symptoms there were no other signs of internal bleeding. I ordered 1 minim of adrenaline in a teaspoonful of water to be given hourly for three doses.

At 1.30 p.m. the nurse telephoned me to say that the child was looking very ill and had passed a copious haemorrhagic stool and also vomited a large quantity of blood. I saw the child at 1.45 p.m., when it seemed entirely collapsed and *in extremis*; while I was looking at it it passed a further haemorrhagic stool, almost bright red in colour, and the condition seemed hopeless. I immediately withdrew 25 c.cm. of blood from the mother's vein at the bend of the elbow and injected this into the gluteal muscle of the child, which was put back in its cot and surrounded by hot-water bottles. The effect was immediate and striking. No further vomiting occurred, and except for the passage of a little clotted blood in a stool, passed six hours after the transfusion, no further bleeding took place. The child was twenty-two hours old when the injection was given. Further progress was uneventful; it gained 1 ounce the first week and 8 ounces the second week, and became quite normal.

London, W.2. M. GOLDING, L.R.C.S.I., D.P.H.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SUMMER MEETING OF SECTIONS OF LARYNGOLOGY AND OTOLOGY.

THE summer meeting of the Sections of Laryngology and Otology of the Royal Society of Medicine was held on June 9th to 11th. The laryngological sessions were presided over by Dr. ANDREW WYLIE, and the otological by Dr. DAN MCKENZIE.

Relation of Nasal Polypi to Inflammation of the Accessory Sinuses.

Mr. T. B. LAYTON brought forward this subject for discussion, premising that he had been keenly disappointed with the traditional treatment of simply pulling out the polypi. He had never found this primitive method curative, unless in the case of a single polypus rising beneath the middle turbinal. There was a difference of opinion as to whether polypi ever existed unless there was some underlying disease in the sinuses. When polypi were present without underlying disease of accessory sinuses they were in the large airways, and appeared to him to be a hypertrophy to compensate for the extra calibre of such airways; this type of polypus was best left alone. In most cases the disease underlying the polypi was an inflammation of accessory sinuses. Pus was found among polypi in three circumstances: (1) muco-pus mixed with polypi, the muco-pus being secreted in the nose, thorough cleansing of which would prevent return; (2) pus in small quantity in a sinus, the site of a chronic catarrhal suppuration, the pus in most cases leaking down into the sinus from the nose, so that it was not a true suppurative sinusitis; (3) cases in which a chronic suppuration might be added to a catarrhal inflammation. Nasal polypi might be associated with catarrhal inflammation in the ethmoid and the maxillary sinus. It was not his opinion that acute catarrhal sinusitis ever became acute suppurative sinusitis; the latter was not accompanied by swelling of the mucous membrane, but was associated with extensive hyperaemia. When a sinus was the seat of acute suppuration it was not his practice to open it. Assuming these statements to be correct, what were the best lines of treatment? All the mucous membrane involved in the catarrh must be cleared away. Commonly the ethmoid was involved, and his practice now was to attempt by external incision to remove the whole ethmoid. This avoided the dangerous olfactory nerve area and the cribriform plate.

In the course of discussion Dr. W. S. SYME agreed that the present treatment of nasal polypi was unsatisfactory; he thought that in every case of multiple polypi in the nose there was antral as well as ethmoid disease. His routine, therefore, had been to open the ethmoid. He did not agree with Mr. Layton's sharp line of demarcation between catarrhal and suppurative disease, though in one case the catarrhal element, and another the suppurative might be predominant. Mr. SCOTT RIDOUT also dissented from the view that the catarrhal and the suppurative conditions were separate entities. He believed that the external operation was not done often enough for the disease under discussion. Mr. J. S. FRASER did not feel justified in opening the antral mucosa in this disease, as in several cases he had found it healthy. He did not differentiate rigidly between chronic catarrh and chronic suppuration. A good indication as to whether, in a given case, the antrum should be operated upon was obtained by proof-puncturing the antrum and washing it out. If after clearing the nose the fluid returned freely and readily one might conclude that the antrum was not full of polypi. If force were needed to send fluid through the syringe it was a good indication for doing the radical operation. Mr. F. B. GILHESPY favoured a somewhat long incision through which the external operation, if necessary, should be done. Dr. SUGARA (Buenos Aires) classified polypi into those originating in the sinuses—chiefly maxillary—those which were simple, and those associated with osteitis of the ethmoid. Recurring polypi demanded radical operation.

Chronic Middle-ear Deafness.

In the Otological Section the chief subject for discussion was progressive middle-ear deafness. Dr. G. SCOTT WILLIAMSON brought forward an analysis of data acquired from a study of 51 out-patients at the Central London Throat, Nose, and Ear Hospital suffering from chronic deafness of the type commonly known as "chronic middle-ear catarrh"; only idiopathic deafness was included. The patients were subjected to a thorough examination of the cardiac, respiratory, digestive, urinary, neuro-muscular, genital, and haemopoietic systems. Out of the 51 cases 7 were found to present signs of established disease—namely, mitral disease of the heart (3 cases), Graves's disease (3 cases), tuberculosis (1 case). The tests on the remaining 44 showed with one exception (the cardio-respiratory balance) the patients to be within the normal of average people at their age limits. All the patients showed a decided tendency to tachycardia, and had easily disturbed cardio-respiratory balance. His conclusion from these cases was that the history of the deafness began at puberty or earlier, and he suggested that the marked dullness and apathy of many of these persons were due to their deafness, or at least their low auditory acuity while at school. Another positive fact noted was that in each of the cases the patient had a peculiar aspect depending upon the size and shape of the nose (pinchbeck). The 51 cases included only 5 males, but Dr. Williamson did not regard this as representing any real sex incidence of the complaint. The male, being under greater compulsion to adapt himself, probably ignored his deafness, and, having a larger choice of occupation, selected employment not dependent on auditory acuity. He believed this deafness to be, not a mere accident during the course of life, but a condition with a specific etiology somewhere in childhood. It was not associated with any disease, nor due to local sepsis, but it might be associated with some constitutions or diatheses. Mr. E. HORACE RICHARDS followed with an analysis of the hearing of this same series of patients. His general conclusion was that the characteristics of the whole group were those of deafness of the mixed type, in most cases to a high degree, with a peripheral contraction of the tone limits.

Dr. DAN MCKENZIE gave a clinical review of 748 cases, unselected except that the deafness had got beyond the stage of mildness. He classified them as follows:

Chronic dry catarrh of middle ear	288
Cicatricial changes secondary to healed suppuration	80
Active suppuration	136
Otosclerosis	206

In 38 cases there seemed to be a combination of suppuration, healed or active, with catarrh or otosclerosis. In most cases tinnitus was the earliest symptom. Generally speaking, it preceded deafness by months, sometimes by years; in other cases the two conditions appeared simultaneously. After describing the results of the tuning-fork tests, he said that his figures supported the orthodox teaching that in progressive middle-ear deafness the hearing for deep tones through the air was reduced relatively to the hearing for middle and moderately high tones. With regard to the physical examination, he believed that the condition of the membrana tympani—its colour, texture, and situation, together with the mobility or immobility of the malleus handle, as tested by Siegle's speculum—was no indication of the presence or absence of deafness. His cases manifested five points in common, though varying somewhat in their incidence: (1) tinnitus, frequently composite; (2) progressive deafness; (3) increased bone conduction; (4) variable upper tone limit; (5) a negative Rinne. The fact that this symptom group was common to all the varieties surely indicated that, whatever might be the primary pathological change that initiated the process, there must be some physical factor, also common to all the groups and varieties, that induced the syndrome. It would also seem that once this physical factor or secondary change, whatever it might be, was set going, it would continue to progress by its own inherent tendency, and independently of its initial cause, until its progress came to a standstill. He thought the inner wall of the tympanum might be the seat of the physical factor of which they were in search. It remained to account for two phenomena which recalled the nerve mechanism of the cochlea—namely, the tinnitis and the not infrequent diminution of bone conduction. He thought that even such apparently cochlear phenomena as these might be referred to the middle ear, and if, as seemed plausible, the fixation of the fenestral structures—whether by bone, as in otosclerosis, or by scar tissue, as in suppuration and the dry catarrhs—might be credited with the power of causing tinnitus by altering intra-labyrinthine fluid pressure in some way, it was possible to refer all the phenomena to the middle ear, and particularly to the inner wall. This argument, he added, did not exclude the real occurrence of genuine cochlear changes, and cochlear deafness, as a result of the permanent withdrawal of normal cochlear stimuli attendant upon serious middle-ear deafness—changes which, it was known, did undoubtedly occur.

Mr. G. J. JENKINS declared himself unable to recognize, pathologically or clinically, the condition known as "progressive middle-ear deafness," sometimes described as "chronic middle-ear deafness," or even termed "dry middle-ear catarrh." The terminology, in his opinion, was wrong and misleading. They were all familiar with the textbook description of the disease under this name, with the detailed accounts of the active local treatment and general management of the patient. The pathology was in most books purely speculative. The symptoms and signs were usually roughly and indefinitely indicated, and so far as they went, were the same as an imperfectly described otosclerosis syndrome. He believed that if a complete modern examination had been made in these cases on which this terminology was founded, the diagnosis would have been one of otosclerosis. In his opinion, pure middle-ear changes, including fixation of the stapes, would give only pure obstruction signs, and if any symptoms such as internal-ear deafness or those specially associated with otosclerosis were present the labyrinth should then be regarded as affected. He had not known progressive middle-ear deafness, in the sense implied in the title of this discussion, that could be attributed to middle-ear changes only.

In the course of some further discussion, Mr. NORMAN BARNETT thought there could be no question that there was a distinct entity in chronic middle-ear deafness. The cases could be divided into those secondary to a long antecedent suppuration of the middle ear, those with a distinct focus of infection, such as septic tonsils or a septic condition of the nasopharynx, and those in which there was some obstructive lesion, such as a pronounced deflection of the nasal septum. Mr. J. S. FRASER thought the best classification of these cases of chronic deafness was into normal and abnormal tympanic membranes. If one had a case of chronic deafness which gave the usual tuning-fork results with perfectly normal drumheads one might be sure of otosclerosis, no matter whether the flamingo tinge was present or not. In most cases in which there were abnormal drumheads there was no progressive middle-ear deafness. If tinnitus was a marked feature, if there was a hereditary history, if the catheter resulted in no improvement in hearing, and if deafness was increasing, he thought the case might be regarded as otosclerosis, in spite of the abnormality of the tympanic membrane. Sir J. DUNDAS-GRANT had a bias in favour of the idea that many of the cases of chronic or progressive middle-ear trouble were secondary to the narrowing or catarrhal thickening of the walls of the Eustachian tube.

Mr. SOMERVILLE HASTINGS was surprised at the proportion of otosclerosis in Dr. McKenzie's cases. In his experience what he would call otosclerosis was exceedingly rare. Cases ordinarily called otosclerosis really began as sepsis in some region of the nose and throat at some stage in life; he believed that a great many cases of chronic progressive deafness began in very early life. It was difficult to distinguish between the cases in which the process went on whatever was done, and those in which the process could be stayed. The thing to do was to make a careful examination for sepsis and treat it when found. It would not be found in all cases, but in a sufficient proportion to make

that line of treatment worth while. Mr. HERBERT TILLEY said that Dr. McKenzie had spoken of tinnitus as being a cochlear symptom. How did he explain those very desperate cases in which patients had tended to suicide in order to get rid of their "noises," and in whom the auditory nerve had been completely divided within the skull, and yet the tinnitus continued? He also felt that if terminology was important, so was pronunciation. It should be "ti-nī'-tus," not "tin'itus." Dr. MCKENZIE recalled an occasion at a Section meeting of the British Medical Association when Sir StClair Thomson, who was in the chair, introduced the opener of the discussion by saying that he would tell them whether it was "ti-nī'-tus" or "tin'itus," whereupon the opener began, "Gentlemen, the subject of my remarks is 'ti-nē'-tus'"!

A medical man who had been a patient, introduced by Mr. Norman Barnett, also spoke. He said that he had noticed deafness as a student when using the stethoscope, and it became worse. Four years ago an operation on turbinates was done, with improvement for a time. In September, 1925, the left ear became completely deaf, and he was advised to give up practice, as nothing could be done for his hearing. An examination in December, 1925, showed a marked deflection of the nasal septum with an adhesive remnant of the right middle turbinate. There were buried septic tonsils and retracted and inflamed tympanic membranes. Submucous resection of cartilage and bone of nasal septum, which was found to be fractured, was done, diseased and adherent turbinates removed, and ultra-violet rays, general and localized for throat, were administered. Subsequently oto-massage with ionization over mastoid and vaporization through the Eustachian catheter and the tympanum with hot iodine, camphor, and carbolic vapour was carried out. On testing in February and March, 1926, there was improvement for all tests, and hearing for conversation and whispered voice was practically normal. Since then there had been further improvement, and he was now able to carry out all professional examinations with ease. He added that in the country village where he practised there were thirty people who were deaf, and of these he had treated eighteen, on the line of treatment he had himself undergone, with success in every case.

Other Papers and Exhibits.

Among other papers read in the course of the sessions was one by Mr. DOUGLAS GUTHRIE and Mr. NORMAN DOTT on the occurrence of brain tissue within the nose, the so-called nasal glioma, with a description of two cases, one an encephalocele which in adult life became incorporated with nasal polypus, and the other case illustrated the penetration of the nasal cavity by a cerebral frontal glioma of the spongioblastic type. Mr. BRAYSHAW GILHESPY read a paper on chronic hyperplasia of the jaw and indicated certain similarities between this disease and otosclerosis. Mr. MICHEL VLASTO introduced the subject of meningitis of the frontal sinus region, which he thought might not be so infrequent as supposed. No necropsy was complete, in a case succumbing to meningitis, which did not include the opening of the sphenoidal sinus cavities in cases in which an otitic cause of the meningitis had been diagnosed. A number of cases were shown by Dr. W. S. SYME, Dr. J. A. GIBB, Dr. T. B. JOBSON, and others, and there was also an exhibition of instruments, among them a lamp, shown by Dr. DAN MCKENZIE, for examining a patient in bed, and, by Dr. W. H. KELSON, a clockwork burr useful in operations on the labyrinth and mastoid, a magnifying lens to be worn on the thumb of the operator, and an instrument for measuring the amount of protrusion of a bougie from the extremity of the Eustachian catheter.

Dr. GRAHAM HODGSON gave a demonstration of radiograms of the normal and abnormal labyrinth. He had visited recently the clinic in Utrecht where similar work is carried out. He said that owing to the number, complexity, and density of the various structures overlying the petrous bone it was difficult to get a clear view of the labyrinth, and only after elaborating a special *x*-ray apparatus and taking 1,200 views of the normal labyrinth was he able to work out the series of angles by which to obtain the desired view.

LATENT SEPSIS IN PREGNANCY TOXAEMIA.

AT a meeting of the North of England Obstetrical and Gynaecological Society at Sheffield on May 27th, Dr. CARLTON OLDFIELD in the chair, Miss F. IVENS (Liverpool) read a paper on latent sepsis as a factor in the etiology of the toxaemias of pregnancy.

Miss Ivens said that in a paper read before the London Association of Medical Women in February, 1925 (JOURNAL, 1925, vol. i, p. 589), she had drawn attention to the association of latent infection with the oedema and albuminuria of pregnancy, and had expressed the view that oedema and albuminuria during pregnancy were an indication for the bacteriological examination of the urine, even in the absence of urinary symptoms, since the causal organisms might not infrequently be demonstrated thus. The toxaemias of pregnancy—namely, oedema, albuminuria, hyperemesis, accidental haemorrhage, jaundice, and eclampsia were closely allied, and there was probably a common factor in all—namely, a bacterial origin. She had instituted a bacterial investigation in these cases as she was disappointed with the result of biochemical research. She divided the cases into four classes.

(1) *Albuminuria and Oedema.* Thirteen patients had been treated during the last two years at the Liverpool Maternity Home. In these cases the presence of coliform organisms with pus and sometimes blood was demonstrated in the urine. They were treated by rest in bed, rectal saline injections, calomel, saline purgatives, and potassium citrate in large doses. In only one case of a patient allowed to go home before delivery was the child stillborn. Of 21 cases examined bacteriologically at Crofton Hospital, 7 contained *B. coli*, 2 a non-haemolytic streptococcus, 11 a *Staphylococcus albus*, and one was sterile. Of the 7 cases with *B. coli* in urine, pus was present in 5, the conditions being respectively hyperemesis, hyperemesis with abortion and phlebitis, pyelitis, pyelitis and cystitis, and cystitis. No pus was found in one case of hyperemesis and another case of hyperemesis in which labour was followed by morbidity. Two patients had streptococci in the urine; one was a case of abortion, and the other patient, then seven months pregnant, had had ante-partum haemorrhage in previous labours, followed by pelvic abscess. (2) *Hyperemesis gravidarum.* The first case was that of a primipara who vomited constantly throughout her pregnancy. The urine contained albumin, red cells, pus cells, and coliform bacilli, and in addition there was an abscess of Skene's glands. The temperature was 101°, and the pulse 130. Rectal salines and potassium citrate in large doses were given, and 10 c.cm. of an anticoli serum. A premature infant was born which lived for sixteen hours. The vomiting continued after delivery, with raised temperature and pulse. After vaccine treatment for three months the patient was discharged with the urine practically normal and the general condition excellent. The second case was that of a 2-para who had had vomiting throughout her first pregnancy and had been prematurely delivered of a child which died on the fourth day. In the second pregnancy she was well for the first three months, but then vomited incessantly. On admission the temperature was 99.8° and the pulse 110. The patient became comatose and the vomit was haemorrhagic. The urine contained albumin, coliform organisms, and acetone and diacetic acid. A Caesarean section was performed at twenty-six weeks owing to her serious condition, and she quickly recovered. (3) *Jaundice.* The first patient was a 3-gravida admitted with vomiting, jaundice, retention of urine at eight months' gestation. The urine contained pus, bile, and *B. coli.* After treatment with purgatives, potassium citrate, and salines, improvement was marked. Labour started with excessive bleeding, but the child was born alive, though jaundiced. Rigors followed delivery, with an attack of pyelonephritis on the right side; on discharge the urine was normal. It was probable that in this case, in addition to infection of the urinary tract, infection had spread to the biliary passages. The second patient was a 6-gravida who had always vomited severely during pregnancy. Five days before her confinement she vomited blood-stained material. On admission she was jaundiced, the temperature being 97° and the pulse 120. The urine contained albumin, pus, coliform bacilli, acetone and bile; blood culture was sterile. A macerated foetus was delivered after internal version for transverse lie and prolapsed cord; 10 c.cm. of antistreptococcal serum was given, and rectal saline injections. She was quite well on discharge from hospital a fortnight later. (4) *Accidental Haemorrhage.* The first patient was a 3-gravida on whom a Caesarean section had been performed in 1924 for contracted pelvis. In 1926 she was delivered by Caesarean section for severe ante-partum haemorrhage; there was blood-stained fluid in the peritoneal cavity, and haemorrhages into the wall of the uterus. The child was dead. The urine contained a trace of albumin, coliform organisms, and streptococci; coliform organisms were recovered from the placenta. In 1927 a third Caesarean section was performed; the urine was normal, and the patient appeared perfectly healthy. The second patient was a 5-gravida whose first three pregnancies and deliveries were normal. In her fourth labour there was concealed accidental haemorrhage. She was delivered, by Caesarean section, of a dead child. There was haemorrhage into the wall of the uterus, and the urine contained pus and coliform bacilli. In her last pregnancy in 1925 labour was premature. She had oedema and

vomiting for five weeks previously, and the urine contained albumin, coliform organisms, and streptococci. The placenta showed areas of white infarction and round-celled infiltration. The third patient was a 6-gravida delivered by Caesarean section, for placenta praevia, of a child weighing 4 lb. 5 oz. Haemolytic streptococci and staphylococci were found in the wound, and the urine contained a trace of albumin with staphylococci. The child died on the fifth day after haemorrhage from the mouth and nose. The fourth patient, an 8-gravida, was admitted almost moribund with ante-partum haemorrhage; she died soon after delivery of a macerated foetus. Cultures from the placenta contained coliform bacilli and streptococci, but no urine was obtainable for examination. The fifth patient was a 7-gravida with concealed accidental haemorrhage, and Caesarean section was performed. Blood-stained fluid was in the peritoneal cavity, and the uterus showed intramural haemorrhages. The child was dead, and the patient died immediately after operation. The urine contained albumin, staphylococci, and streptococci. The placenta gave growths of *Staphylococcus albus* and a non-haemolytic streptococcus. A varicose ulcer on the patient's leg contained *Staphylococcus albus*. The maternal liver showed hyaline thrombi. The kidneys contained hyaline thrombi with areas of coagulation necrosis; the uterine muscle stained badly and showed haemorrhages.

In conclusion, Miss Ivens said that she had hoped to stimulate interest in the bacteriological investigation of similar cases, for she was convinced that latent and autogenous infection played a great part in the pathology, especially of cases with lowered resistance during pregnancy, and of those delivered with trauma. She considered it necessary to obtain a full life-history of these patients, and evidence of foci of infection should be looked for in the throat, gums, and elsewhere. Professor Beattie, Dr. Ashcroft, and others had assisted in the bacteriological investigation.

Dr. CARLTON OLDFIELD (Leeds) agreed that urinary infections were very commonly associated with albuminuria. There was danger sometimes of assuming when organisms were present that they were the cause, when in reality they were the result, of some pathological condition. He still was of the opinion that hyperemesis gravidarum was not due to a toxaemia.

Mr. A. GOUGH (Leeds) said that it was not sufficiently realized by practitioners how often the genito-urinary tract was infected. Of 100 gynaecological cases examined bacteriologically by him, in 70 cultures of bacteria were obtained, of which 10 were growths of *B. coli*. He explained the preponderance of *B. coli* infection on the ground that this was a mobile organism capable of swimming up stream, and of rapid proliferation.

Mr. J. E. STACEY (Sheffield) said that at the Jessop Hospital, Sheffield, they had been struck with the number of cases of morbidity during the puerperium in those patients with albuminuria during pregnancy and labour.

Dr. S. B. HERD (Liverpool) asked if there was any definite association in Miss Ivens's cases between sepsis during pregnancy and morbidity during labour and the puerperium.

Miss IVENS replied that she had instituted a bacteriological investigation in her cases of toxaemias of pregnancy because the biochemical investigations had not yielded any clues as to their causation, and she had been impressed by the findings. She had noticed that cases of latent sepsis did not do so well in the puerperium as normal cases.

Calculi in a Case of Procidentia.

Mr. J. E. STACEY (Sheffield) showed calculi removed from a case of complete procidentia. The patient was a 4-gravida, aged 41, who had had falling of the womb for four years. The uterus had been outside the vulva for a year, although a ring pessary was worn. The only urinary trouble was occasional scalding micturition and frequency. The urine was alkaline, and contained pus and coliform bacilli. On examination the largest stone could be felt in the cystocele and the rest in the main body of the bladder. The ten stones shown had been removed by an anterior vaginal wall incision and cystotomy. After treating the cystitis and ensuring closure of the vesical wound, the uterus was removed three weeks later by the vaginal route with anterior and posterior colporrhaphy. The stones weighed 6¾ oz.; they were laminated and consisted chemically of sodium carbonate, ammonium urate, and a triple ammonium magnesium phosphate. They were examined by *x* rays to eliminate the presence of a foreign body as a nucleus.

Dr. CARLTON OLDFIELD (Leeds) said that in his experience stones in the bladder were exceedingly rare, and asked if the urine was ammoniacal.

Mr. A. GOUGH (Leeds) referred to a case of vesical calculus which he had reported to the society some years previously. This was a single stone weighing 12½ oz., which he had removed by suprapubic cystotomy, the wound of which was very slow in closing.

Miss IVENS (Liverpool) recalled a severe case of procidentia with vesical calculi, which had caused a vesico-vaginal fistula, through which they had been discharged from the bladder.

Dr. J. W. BRIDE (Manchester) had removed a small stone from the bladder by lithotrity, and had assisted Professor Fletcher Shaw to remove one by vaginal cystotomy.

Dr. J. PHILLIPS (Bradford) had seen two cases with small calculi enclosed in a diverticulum from the urethra from which they had been excised.

Mr. STACEY replied that the urine was ammoniacal when he first saw the patient. He considered the vaginal route much the best, as healing of suprapubic incisions was very slow.

Pregnancy Complicated by Fibromyoma.

Dr. S. B. HERD (Liverpool) read notes of a case of pregnancy complicated by a necrobiotic fibromyoma and later by accidental haemorrhage. The patient, a primigravida, was first examined at a period of twelve weeks' gestation, and a soft non-tender swelling was detected high up on the right side of the uterus; this was diagnosed as a subserous fibroid. At seventeen weeks' gestation the patient had acute dysuria and feeling of great pressure in the vagina and region of the symphysis pubis. On examination the uterus was felt to be displaced by a hard tender mass fixed in the right side of the pelvis; diagnosis of degeneration of the fibroid was made. As it was impossible to move the tumour under anaesthesia the abdomen was opened and a degenerated fibroid was removed from the uterine wall just above the right utero-sacral ligament, with some difficulty and not without a great deal of manipulation of the body of the uterus. No other fibroids were present. The patient was kept under the influence of morphine for a few days to diminish the chances of abortion, which treatment succeeded. On the fifth day there was thrombosis in the right leg which was believed to be due to lack of exercises ordered. The patient remained quite well until thirty-two weeks' gestation. A violent headache then developed; on the next day foetal movements ceased to be felt and she had slight oedema. Two days later there was marked oedema, and 16 grams of albumin per litre in the urine; the foetal heart sounds were heard on that day. Two days afterwards there was sudden onset of pain and vaginal haemorrhage, and morphine was administered. Three days later a slightly macerated foetus was delivered. The puerperium was normal. The special points in this case were the persistence of the pregnancy after marked manipulation of the uterus; the supervention of toxaemia followed by accidental haemorrhage; and the fact that the foetal heart was heard for three days after the perception of movements had been lost.

Dr. CARLTON OLDFIELD (Leeds) did not think that the lack of exercises should be blamed for the thrombosis. He suggested that the necrobiosis in the fibroid had set up toxaemia in the first place, causing a retro-placental clot which gave rise to placental changes and later to albuminuria and accidental haemorrhage.

Dr. E. O. CROFT (Leeds) said that it was surprising how much manipulation a pregnant uterus would stand without aborting, and recalled a similar case of myomectomy.

Mr. STACEY asked what would have happened if operation had not been performed. He had seen a pregnant patient with a large fibroid in the fundus and symptoms at seven months' gestation. It was treated expectantly and settled down. The patient had a placenta praevia, and the child was stillborn. On the ninth day of the puerperium symptoms again arose, and myomectomy was successfully performed.

Miss IVENS (Liverpool) recalled a case in which three weeks before term induction was attempted by bougie for a contracted pelvis. Introduction of a bougie caused severe bleeding and it was withdrawn. At term Caesarean section was performed and a large retro-placental clot was found. There had been no albuminuria in the meantime.

Mr. W. GOUGH (Leeds) related a case in which a fibroid the size of a hazel nut gave rise to such severe pain during pregnancy that operative treatment had to be undertaken. Myomectomy cured the condition.

Dr. HERD replied that there was an interval of fourteen weeks between the operation of myomectomy and the onset of the albuminuria in his case, and he submitted that this was too long for the latter to be due either to the necrobiosis or to retro-placental clot caused by the uterine manipulation. He said that in this case the position of the degenerated fibroid would have obstructed labour even at the early period of eighteen weeks' gestation, and so an operation was essential.

Pelvic Myxoma.

Mr. A. GOUGH (Leeds) described a case of pelvic myxoma in a multipara aged 35. She had noticed a swelling in the left gluteal region at least twelve years previously, and others had later formed in the abdomen, perineum, and vulva. Four operations had been performed between 1915 and 1924, during one of which the large gut had been damaged, necessitating a colostomy which only closed several months later. Menstruation was normal, and the functions of the bladder and rectum were unimpaired. There was a mass filling the left lower quadrant of the abdomen, the overlying skin of which showed the scars of previous operations. The tumour could be traced over the pubis to the left labium majus, where it formed a huge pedunculated mass hanging down nearly as far as the knees. The circumference of the upper part was 15½ inches, of the lower end 22 inches, and the total length from the pubis was 11 inches. The skin over it was thinned and purplish in colour. The tumour could be traced backwards into the left buttock, where there was a mass the size of an adult head. The tumour was painless and felt spongy and elastic with some coarse lobulation. Vaginal examination was unsatisfactory, but the left side of the pelvis was found to be full of growth continuous with the superficial masses and displacing the vagina and rectum to the right. Complete removal was impossible. At the first operation the pendulous portion was removed at its origin at the level of the pubis, and weighed 5 lb. 1½ oz. Four months later the gluteal mass was removed. Cystic spaces were noted in both masses. Microscopical examination showed the typical structure of a myxoma. The cystic spaces were bounded by layers of condensed stroma, no epithelial lining being demonstrable.

Dr. CARLTON OLDFIELD said that it was very difficult to deal with these cases. He had operated on one patient several times. He suggested deep *x*-ray therapy.

Mr. GOUGH, replying, said that he had discussed *x*-ray therapy with a radiologist, who expressed the opinion that it was useless in these cases.

Solid Ovarian Tumour with Twisted Pedicle.

Mr. GOUGH also described a case of a large solid ovarian tumour with a twisted pedicle. The patient, aged 52, was seen two years after the menopause; she had known of the presence of an abdominal tumour for seven years. This had recently increased rapidly in size, and she had then had pain, vomiting, diarrhoea, and frequency of micturition; her health had rapidly deteriorated. She was very pale and thin, and the abdomen showed the presence of a tumour larger than a full-term pregnancy; it was tender on palpation and dull on percussion. On vaginal examination the cervix appeared to be continuous with the tumour. The pulse was 120 and weak; the temperature was normal. The urine contained pus, albumin, and coliform bacilli. The haemoglobin percentage was 40; the red corpuscles numbered 1,965,000 per c.cm., and the white corpuscles 27,000. The diagnosis was uterine myoma, probably degenerating, and possibly suppurating. Four days before the operation the patient was given a transfusion of 20 ounces of blood, which greatly improved her condition. At the operation the tumour was found to arise from the left ovary; it had twisted its pedicle to the size of a finger, and was lightly adherent to abdominal contents. It was easily separated and removed. During convalescence there was an exacerbation of the infection of the urinary tract. The tumour weighed 13¼ lb.; its surface was smooth and showed red and yellow mottling. On section it resembled the spleen. The specific structure only showed near the surface, and was seen to consist of long fusiform cells with rod-shaped nuclei. Leucocytes were also present. The cause of the profound anaemia was probably loss of blood in the tumour, possibly also the absorption of haemolytic toxins.

Dr. OLDFIELD believed that in cases of fibroids of the uterus there was some other cause for the anaemia than simple loss of blood. He had operated on many anaemic cases of fibroid, but had never thought it necessary to transfuse them before operation.

Dr. CROFT thought that long continued bleedings produced a more permanent and dangerous anaemia than single large haemorrhages.

Mr. GOUGH replied that he considered that in some of these very pale women transfusion with blood was a very useful method of pre-operative treatment.

TREATMENT OF MENTAL EXHAUSTION AND DRUG ADDICTION.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society on June 2nd, with the President, Dr. E. RIVAZ HUNT, in the chair, Dr. E. R. FOTHERGILL opened a discussion on the treatment of mental exhaustion and drug addiction.

Dr. Fothergill commenced with the warning that the mental and spiritual attributes of patients must not be ignored, since health was the harmonious co-operation of these with the physical attributes. The proposal that ministers of religion should attempt to cure physical and mental troubles solely by dealing with the spiritual aspect was to be deprecated. The two professions should co-operate, but the medical practitioner must be in control. Dr. Fothergill then explained that in discussing mental exhaustion he would not touch on this in relation to disease or injury, nor on its effects in childhood and youth. Mental exhaustion in the adult, apart from disease or injury, manifested itself in excessive emotional reaction, anxieties and loss of confidence, with irritability, failure of concentration, disproportionate fatigue, indigestion, emaciation, dread of insanity, delusions and phobias, sleeplessness, and innumerable other nervous symptoms. The advice of friends to the sufferer from mental exhaustion was generally worse than useless, and until the patient settled down to deal with his trouble, and stopped thrusting it back into the subconscious, all efforts at treatment would fail. The right atmosphere, and the services of an attendant, should be obtained. The patient should go to bed, and after the usual constipation had been dealt with he should be given full diet. He should then be encouraged to allow his brain to rest until the physical state had been re-established, by which time many of the symptoms would have disappeared. It would then be time to discover from the patient the cause of his illness, and to treat it. The patient would be better able to respond to encouragement, and to give the doctor his confidence. As much sleep as possible should be ensured, and Dr. Fothergill in this connexion alluded to the use of barbituric hypnotics. At first no books or papers should be allowed, but after a while the patient would probably ask to see a picture paper; this date should be noted. The relatives should not have any communication with the patient, with the exception of an occasional postcard, but they might give assistance in disclosing the cause of the illness. Records of weight should be taken at intervals of fourteen days. The patient must first be induced to believe that there was no physical or mental disease, and that his trouble could be dealt with; he must cease deploring the past, and dreading repetition of it, and be encouraged to turn his thoughts to the future constructively. The whole outlook had to be readjusted, and this was best brought about by the

patient himself under the tactful and sympathetic guidance of a doctor who could place the facts in their right position and their right proportion. It must be explained that his case was analogous to that of friends on the telephone, unable to converse because they had not been connected; it was not a case of the batteries requiring recharging. The patient must be got to realize that it was in himself that he would find the clue to the breakdown and to the re-establishment of normal functioning. Relatives might regard the question of certification with horror, or find it attractive for ulterior reasons. Great care must be exercised. There were many people of undoubtedly unsound mind who could be brought back within a very short while if suitably treated. Should certification be delayed on this account, it was advisable for the delay to be approved by a second medical practitioner, and for the facts to be placed before the Board of Control. With regard to our knowledge of mental exhaustion in industry, this was the pooled result of experiences in the case of individuals. The medical profession should protest against destructive influence on the body and soul due to the extensive mechanization of industry. To combat this influence more effectually the medical practitioner should communicate the experience gained in dealing with cases of mental exhaustion in private practice to those engaged upon the work in larger fields. Passing to the question of drug addiction, Dr. Fothergill said that, excluding alcoholism, this condition was, in his experience, found only among intellectuals. Without corroborative evidence no statement by an addict was reliable. A voluntary addict, without the excuse of disease or injury, must be regarded as having been potentially mentally unbalanced. If this was accepted, then treatment followed similar lines to that of mental exhaustion, since it would be useless to treat the drug addiction without dealing with the underlying cause. Drug addiction as the result of disease or injury became increasingly difficult to treat when the physical reasons for giving the drug were gone. In the absence of disease or injury the treatment was by gradual reduction; in the case of alcohol, at the commencement; with morphine and its derivatives, at the end. The medical practitioner must be certain that no drugs could reach the patient without his knowledge or that of the attendant. The amount of liquid in the barrel of the syringe, or the size of the suppository, must never be varied. As the treatment progressed, and the strength of the dose was decreased, it must be remembered that the patient would become more difficult to handle.

HEART-BLOCK.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on May 20th, the President, Dr. G. E. NESBITT, showed a case of complete heart-block.

The President said that the patient was a man, aged 62, who had been admitted to hospital a week previously, complaining of swelling of the abdomen and shortness of breath. His symptoms had begun about nine months previously, before which time he had been perfectly healthy, and for most of the nine months he had been taking digitalis in large doses. His heart was extremely slow (36-40), but quite regular. The abdomen contained fluid, 64 ounces having been removed the previous day, when the liver was found to be enlarged. The electro-cardiograph showed slow ventricular complexes of normal shape, though much exaggerated in Lead 3; peristaltic waves were entirely absent, and there was also evidence of right ventricular preponderance. An *x*-ray examination disclosed an enormous heart shadow. The Wassermann reaction was negative. After the subcutaneous injection of 1/50 grain of atropine the pulse rate rose to 52 in about half an hour, but soon resumed its former level. The President added that the case appeared to be one of complete heart-block with auricular fibrillation. In view of the history of prolonged administration of digitalis the question of the possible causal connexion of this drug would arise. Except experimentally, digitalis did not appear to cause complete heart-block of this type, and no other evidence of toxic effects had been present. There was also a suspicion that the liver might be the seat of malignant disease. Electrocardiograms from another recent case of typical complete heart-block were also shown.

Dr. H. T. BEWLEY said he had encountered a few cases of complete heart-block, but none of them were associated with digitalis. He asked if Dr. Nesbitt's patient had suffered from fainting attacks, as he had had a patient with such a condition in whom the pulse was 28, and there were periods, of from four seconds, in which it was impossible to detect the heart beat. This patient gradually recovered, and lived for several years a quiet life, but it had taken some time for the heart to become accustomed to the very slow rhythm, and during this period the patient had had very severe attacks of fainting, and had several times nearly died.

The PRESIDENT, replying, said that he had proved that the condition in this patient was not due to digitalis, but he thought that time would decide how much, if any, of the condition might be attributed to digitalis. The patient's pulse had never been below 36, and he had never suffered from fainting attacks.

Mikulicz's Disease.

Dr. J. SPEARS showed a case of Mikulicz's disease in a woman, aged 50. She had been having *x*-ray treatment. Nothing abnormal was found in the blood, but septic teeth had been removed. She was deaf, but it was not known whether the deafness was due to Mikulicz's disease or not; the drums were normal, and the deafness was of the middle-ear type. She had never complained of pain, but after the *x*-ray treatment she had had a slight rise of temperature on three occasions.

Dr. A. R. PARSONS believed that the present case was the fifth of Mikulicz's disease reported in Dublin during the last twenty-five to thirty years. The condition was probably not a definite entity, but occurred in various classes of conditions; most cases proved to be leukaemia or Hodgkin's disease. He regarded Mikulicz's disease as merely a syndrome, which might change into one of these other diseases, in which enlargement of the glands and of the spleen was always found.

Mycosis Fungoides.

Dr. J. M. O'DONOVAN read notes on a case of mycosis fungoides, and showed photographs. The patient, a young woman, presented six red tumours; four on the scalp, one over the sternal end of the right clavicle, and one over the sternum. Examination of the blood and urine was of no diagnostic assistance, and the Wassermann test was negative. Exhibition of potassium iodide produced no improvement in symptoms or in the tumours, of which those in the scalp had ulcerated. The condition cleared up completely under *x*-ray treatment, and the patient had been well for five months. A remarkable feature of the case was the relatively acute onset, and the entire absence of prodromal pruritus.

The PRESIDENT said that the condition was one which he thought was not well known except theoretically. Dr. O'Donovan's result obtained so far was remarkable, since it was generally thought that these cases were progressive, and that the issue was uniformly fatal.

Dr. E. T. FREEMAN said he had seen two cases of mycosis fungoides in France in 1922, and he agreed with the diagnosis made by Dr. O'Donovan. One of his own cases resembled that of Dr. O'Donovan; there had been no pre-mycotic stage at all, and the tumours had appeared initially. It was a feature of the disease that the tumours might completely disappear after treatment by *x* rays and reappear many years later.

Dr. W. G. Harvey said he had never seen previously a case which had started with tumours only; he had encountered a few cases which had started with a pre-mycotic stage, but in all his patients the tumours had disappeared after *x*-ray treatment, but after a time had returned. He thought that a time came when these tumours ceased to respond to *x* rays. The absence of recurrence in the present patient was somewhat against the diagnosis of mycosis fungoides.

Cure in Diabetes Mellitus.

Dr. J. M. O'DONOVAN read notes on a case of diabetes mellitus in a man aged 60, presenting glycosuria, acetone bodies in the urine, and hyperglycaemia. On an Allen diet he required at first sixty, then forty units of insulin to produce tolerance. In two months after discharge from hospital he was able to increase the diet, and after progressive diminution of the insulin, to stop it and revert to a diet normal in all respects save the inclusion of sugar.

The PRESIDENT, referring to the possibility of a cure in diabetes, stated that great improvement occurred in a very large number of cases of diabetes. He could remember many patients who after treatment by insulin had returned to work, and remained well, while taking insulin after discharge from hospital; he thought that in many of these the function of the pancreas must have improved. He generally gave insulin to his patients in two doses daily, one after breakfast and one after dinner; he did not give it early in the morning.

Dr. J. SPEARS referred to the case of a man about 50 years of age with diabetes. He had at first sugar, diacetic acid, and acetone in his urine, but subsequently the urine became normal and had remained so for six months. He, however, came back to hospital with gangrene in his toe, and amputation was required.

Dr. W. H. ASHMORE said he had recently seen a man who had been in Egypt in the hot weather, had returned to London, and had been found to be suffering from diabetes. He was dieted, and had no sugar in his urine, but acetone. Dr. Ashmore decreased the carbohydrates, following which the acetone disappeared, and the patient returned to full diet without recurrence of acetone or sugar. This suggested that the condition known as acute diabetes did occur. He had also had a patient with bad pyorrhoea, who had acetone and sugar; after dieting and removal of his teeth he had remained free from both sugar and acetone. He thought that in diabetic cases an ordinary diet with low carbohydrates and a high quantity of fats was not good. In these cases if the acetone and diacetic acid were removed the sugar often disappeared.

Dr. V. M. SYNGE referred to the case of a man, aged 22, with severe diabetes, who stated that five years previously he had had exactly the same symptoms—wasting, polyuria, and thirst. At that time he had been in hospital and had been dieted, and had become sugar-free. When he went back to the country, however, he had ceased to diet, and had remained well for five years. Then, a couple of months prior to admission to hospital for the second time, the symptoms had recurred. This was a case in which the diabetes had at first been of a temporary nature.

Dr. A. R. PARSONS thought that cases of diabetes were not cured by insulin, but that it was of tremendous value in dealing with some emergencies; it undoubtedly greatly mitigated the dangers of acidosis.

Dr. O'DONOVAN, replying, said that while his patient had been in hospital he had tried several times to reduce the dose of insulin; each time he had done so the sugar had returned, and so he thought it was obvious that 40 units was the dose necessary to keep him aglycosuric. When the 40 units was given in one dose the patient remained without sugar for twenty-four hours, but if the same amount of insulin was given in two doses the patient did not remain without sugar for as long as twenty-four hours.

Death due to Mediterranean Fever.

Dr. J. SPEARS read notes on a fatal case of Malta fever. The patient had had several febrile attacks at intervals since he had come to Ireland; it was thought that they were of malarial origin. He was obviously anaemic, perspired greatly, and except for a very definitely enlarged spleen presented no clinical findings. His temperature was 101°; the pulse was 104, the respirations 20, and the tongue was coated. The abdomen was quite soft, and his chief complaint was of intense headache, thirst, and night perspirations; his appearance was strongly suggestive of typhoid fever. Several blood films were examined, but no evidence of any malarial or other protozoal infection was found. He was very constipated through his illness. A blood test and a Widal test were negative to typhoid and paratyphoid strains. The only complication was a slight orchitis, which sometimes occurred in cases of undulant fever. The agglutination against *M. melitensis* gave a positive result of 1/125. The remaining course of the illness included progressive weakness, prostration, sweats, and slight rheumatic pains. Various remedies were tried without any success.

Professor J. W. BIGGER stated that the diagnosis could not be proved in this case, as it had not been possible to isolate the organism. If the patient had at any time suffered from Malta fever his blood would still agglutinate, and, therefore, there was no certainty that the case was one of Malta fever. Referring to the duration of the disease, he said that this infection was notoriously protracted, with periods of remission. There was a theoretical possibility of infection with *B. abortus*, the presence of which in human beings had recently been reported.

Belladonna Poisoning.

Dr. J. SPEARS read a note on a case of suspected belladonna poisoning. A man, aged 32, gave a history of having had dysentery in India in 1917, and was treated with emetine injections as a suspected case of *Entamoeba histolytica* infection; from this he recovered. Later on he suffered from constipation, which had become worse. According to his own account he sometimes took an ounce or more of the extract of cascara sagrada every day, and had tried various other aperients with no good result. He also had had attacks of sore throat and felt very weak. He had lost 7 lb. in weight during the last three months. He had no cough, no night sweats, and no urinary trouble. His speech was drawling and deliberate, and though his thoughts were quite clear, yet his cerebration appeared to be very slow. He complained of great weakness and had to move about very slowly; he felt very drowsy in the day-time. He was considerably emaciated, and dragged his legs when walking; his pulse rate was 48, his blood pressure 100 to 110 systolic and 60 diastolic. The heart sounds were feeble, but there was no bruit. His teeth were sound, his tongue coated but dry, the skin very dry, the lungs clear, breath sounds showed no abnormality, the eye reflexes were normal, the knee-jerks were very sluggish, there was no Babinski reaction, no ankle clonus, and his superficial reflexes were present and normal. Sensation tests were normal, but the response to questions was slow. The urine was normal. The movements of his diaphragm were somewhat limited, and the Wassermann test was negative. His temperature continued subnormal. Aperients and various enemata were tried with no good result. The prescription given to him for his constipation in 1917, after he had recovered from dysentery, contained belladonna, and it appeared that he had been taking from 1 to 2 drachms of the tincture of belladonna every day for the preceding six years. The stools showed no fat abnormality, although the patient said that fat had a sickly effect on him, and there was no definite evidence of a pancreatic lesion. He gradually became weaker and death ensued. The interest in this case lay in the probable diagnosis of chronic belladonna poisoning. The pupils did not become markedly dilated until the close, the pulse rate never rose over 54, and his temperature only reached 99 just before death.

Dr. W. H. ASHMORE commented on the absence of tachycardia, mania, increase of respirations, and dilatation of the pupils. It was quite possible that this patient had a very high toleration for belladonna.

Dr. SPEARS, replying, said that while no other cause for the condition could be found, there was definite evidence that the patient had been taking large and gradually increasing doses of belladonna for a number of years. This made him suspect chronic belladonna poisoning. The features were not definite, and there was no case on record for comparison. He thought he was justified in thinking that the cause of death was perhaps due to stopping the belladonna, but that the initial cause of the patient's trouble was the taking of large doses of belladonna. The patient could read only with difficulty, but Dr. Spears could not make out whether this was due to his slow speech or to bad vision.

Reviews.

A VADE-MECUM OF PARASITOLOGY.

THE small work written by Professor LOISELET is rightly designated a *Vade-mecum*,[1] and adequately fulfils the object for which it has been issued—namely, to provide a volume easily carried for the purpose of facilitating diagnosis. It presents a sketch of the various species of interest and importance to the student of parasitology, and only a master of his subject could thus condense the enormous amount of information found here.

The whole is divided into five parts, dealing in order with the spirochaetes, protozoa, helminths, arthropoda, and the mycoses. The consideration of each member referred to in the ensuing pages of its proper section is preceded by a synoptic table naming in different columns the diseases produced, the vector concerned, the mode of transmission, and, where such exists and is known, the reservoir host. Other tables give in few words the chief points relative to the life-histories of the most important members of the various groups and the characters to be relied upon for identification. To the last section is appended a "mycological glossary" in which are stated the salient characters, the aspects of cultures, and the pathogenic actions of the chief mycotic infections.

Misprints are few and the arrangement of type is such that reference is made particularly easy. We note that a considerable proportion of the specific names are spelt with capital initial letters, to which systematists will properly object. The book does not aim at replacing the detailed textbooks, but as a work to refer to by those who have already been through courses in the subjects dealt with it will serve a useful end, in that it is at once simple and practical.

THE "FAT-LIKE" SUBSTANCES.

THE nine years which have elapsed since the appearance of the first edition of *Lecithin and Allied Substances*,[2] by Professor HUGH MACLEAN, have witnessed no revolution in the chemistry or the physiology of these substances. Such advance as has been achieved has been towards simplification and co-ordination. A revision of this monograph is, none the less, welcome. The duty which is undertaken by authors of monographs in such a series as that to which this volume belongs is not light, since this service to their colleagues requires that they should constantly return to the labour of bringing their text up to date. In the second edition Mrs. IDA SMEDLEY MACLEAN shares authorship with her husband.

The original form of the narrative is little altered. The opening sections on the history and chemistry of the accepted members of the group of lipins now includes the recent work of Levene on lecithin and kephalin. There follows an adequate detailed account of the preparation of these substances—if any detail is adequate to overcome the vagaries in the chemical behaviour of the lipins. The "fat-like" substances of tissues form distressing material for the chemist. Theirs is a fickle waywardness and inconsistency of behaviour which is too human to fail to be exasperating. It has been responsible for the identification as distinct bodies of what now appear to be mixtures of closely related substances. The history of the lipins has been in great part taken up with the separation of the sheep from the goats. A chapter is devoted to the more notable of these discredited individual bodies, and may raise the objection that it unnecessarily crowds the detail of the picture. It will, however, be agreed that the record of error is not without value to the worker in this field.

The brief discussion of the chemistry of the plant lipins serves merely to indicate our almost complete ignorance. Little more satisfactory is the state of knowledge of the physiological function of the lipins in the animal or plant economy. They are present in every living cell, and their place in its integrity and function seems to be fundamental. Beyond this there is little that is not conjecture. The truth is, that their unusual solubilities endow them with a peculiar relation to the structure of the cell which we are far from being in a position to comprehend. The authors are content to review briefly the alleged role of the lipins in the transport and metabolism of the fats, in the physico-chemical structure of the cell, in the cell membrane, and in the clotting of blood.

The question of nomenclature has disturbed the authors as it disturbs all biochemists. They are, probably, wise in adopting tentatively the system employed by Professor Leathes in his companion monograph *The Fats*. Some day national and international bodies may be expected to take the trouble to get together and agree upon an acceptable descriptive nomenclature.

As is the case with all the volumes in this series, the bibliography is extensive and valuable.

A TEXTBOOK OF BIOCHEMISTRY.

WE are threatened with a surfeit of textbooks of biochemistry. The example before us,[3] from the pen of Professor J. B. SUMNER, reminds us that the larger crop springs from the fertile soil of the progressive impatience of American schools of medicine. The reason is not far to seek. Departments of biochemistry have been creeping from under the wing of physiology to lead an independent existence. Manuals for their guidance have been limited, and each has sought to work out its own salvation in a systematized curriculum. The temptation to offer the fruits of such labour to a larger audience is strong, and will not be overcome until a process of natural selection singles out the fittest teacher. The present volume is not inspired, but does seem to offer a more judicious course than have several recent books with a similar aim.

The usual treatment is followed of dealing in succeeding chapters with the chemistry and physiology of the fats, carbohydrates, proteins, urine, and blood. Brief chapters are also devoted to acidosis, vitamins, calorimetry, and detoxication, and longer ones to enzymes and to the physico-chemistry of protoplasm. A certain arbitrariness in the broad statement of some biochemical principles will be occasionally encountered and will distress the teacher, though this may do little harm to the student. Such a statement is that which lays down that "the essential difference between the plant and the animal is that the reactions of the former are to a large degree anabolic, while the reactions of the latter are for the most part catabolic." This is an expression of the prejudiced interest of the biochemist rather than of any intrinsic difference in animal and vegetable physiology.

The book is addressed to "the elementary student"—presumably inclusive of the student of medicine. To such it may be recommended.

FAMILIAL PLEONOSTEOSIS.

THE book on diseases of the bones and joints[4] by ANDRÉ LÉRI is not, as the title might suggest, a systematic treatise, but a collection of papers which have appeared from time to time in the journals. The first article refers to a disease which the author claims that he was the first to recognize and describe—namely, familial pleonosteosis; other articles embody original observations touching details in the pathogeny and clinical characters of such diseases as cleido-cranial dysostosis, Paget's disease, anencephaly, and many others. A comparatively small part of the

[1] *Vade-mecum de Parasitologie.* Par Dr. J. Loiselet (M.I.C.). Paris: E. Le François. 1927. (Imp. 16mo, pp. 153. 12 fr.)

[2] *Lecithin and Allied Substances: The Lipins.* By Hugh Maclean, M.D., D.Sc., and Ida Smedley Maclean, D.Sc., F.I.C. Second edition. Monographs on Biochemistry. London and New York: Longmans, Green and Co., Ltd. 1927. (Roy. 8vo, pp. vii + 220. 10s. 6d. net.)

[3] *Textbook of Biological Chemistry.* By James B. Sumner, Ph.D. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1927. (Demy 8vo, pp. xxiii + 283; 6 figures. 15s. net.)

[4] *Études sur les affections des os et des articulations.* Par André Léri. Paris: Masson et Cie. 1927. (6 + 8½, pp. iii + 460; 128 figures. 58 fr. sans majoration.)

volume is devoted to diseases of the joints, since most of the author's publications on this subject relate to the vertebral column and formed the subject-matter of a previous volume.

The article of chief interest in the book is, perhaps, that on familial pleonosteosis, which appeared in the *Presse Médicale* for January 7th, 1922. The disease affects the whole skeleton, but more especially the long bones; it is congenital, hereditary, and familial. Its main characteristics are deformation of the hands, with immobilization of most of their segments, certain fixed attitudes, such as pronation and flexion of the forearms, internal rotation and abduction of the arms, and external rotation of the thighs, with a reduction in the range of almost all movements. The hands are short, thick, and square; the proximal interphalangeal joints are flexed at a right angle and firmly ankylosed, with the heads of the proximal phalanges projecting beyond the bases of the second. The metacarpal bones and phalanges are short and, as revealed by radioscopy, markedly thickened, and a similar thickening is present in the other long bones of the limbs, and appears to be the main anatomical characteristic of the disease. The thickening is especially marked at the articular ends of the bones, and is apparently the cause of the limitation of movement.

MURDER AND FORGERY.

DURING the years since the armistice there has been, if we may judge by the publishers' lists, a growth of popular interest in notorious murders. The volumes of the "Notable British Trials Series," several of which have been noticed in our columns, possess for the most part a medico-legal interest, since they contain reports of the proceedings which are not easily accessible elsewhere. A book recently published, *Murder for Profit*,[5] by Mr. W. BOLITHO, is in a very different category. It contains picturesque narratives of five notorious murders, two British and three Continental, and some inkling of the writer's point of view may be got from the titles he has bestowed upon the five essays. They are: "The science of William Burke"; "The imperialism of J.-B. Troppmann"; "The self-help of G. J. Smith"; "The poetry of Desiré Landru"; and "The philanthropy of Fritz Haarmann." Except perhaps in the case of Smith, these titles seem to us remarkably inappropriate. As far as we can guess from his outpourings, Mr. Bolitho must be a rebel who resents and would ridicule the attempts of society to enforce its laws, and would also sneer at the efforts of the murderers, whose final detection and execution signalized their failure. He seems to have a particular spite against Napoleon III and M. Clemenceau, and he implicates them more particularly in the blame which he bestows so generally.

The stories of Burke and of Smith are probably well known to most readers, while Landru's case occupied so much of the foreign news in the journals of a few years ago that there is little need to retell the story. That of the Alsatian Troppmann does little credit to the police of the Second Empire, while Haarmann's career of murder, involving at least twenty-four victims—he himself said "thirty or forty"—reveals the shocking state to which social life in Hanover was reduced by four years of war, when the ever-present and all-powerful hand of the State relaxed its grasp.

A century ago a work in several volumes appeared, entitled *Celebrated Trials to the Year 1825*, in which were detailed the chief facts in a number of cases which mostly ended at the gallows. There was in it no pretension to instruction, and there can be little question but that the compilers were animated chiefly by a desire to curdle the blood and make creep the flesh of their readers. To sup full of horrors is still a fearful joy. The volumes of the "Notable British Trials Series" vary a good deal in interest. Kate Webster's murder of her employer at Richmond, Surrey, in 1879 was a sordid crime committed for gain by a brutish habitual criminal. The fact that the body was dismembered and its fragments disposed of in various places does not lend interest, for *post-mortem* dismemberment seems to have become common.

Another volume of the series deals, not with murder, but with forgery.[6] Henry Fauntleroy, the forger, was a partner in a Berners Street bank, and by an ingenious system of false book-keeping converted to his own extravagance £400,000 of the depositors' Government securities. Outwardly he was most irreproachable, living in a non-conformist atmosphere. His father had been managing partner and the brains of the bank, and the son, who lived in constant suspense that he would be caught in his complicated system of fraud, sought an anodyne in expensive distractions. After ten years of this life the blow fell; he was arrested and, after a trial which lasted two days, was condemned, and on November 30th, 1824, was executed outside Newgate Prison. Among the other forgers whose misdeeds are related in this volume are John Ayliffe, John Rice, the brothers Perreau, one of whom was a fashionable apothecary, the Rev. Dr. William Dodd, on whose behalf Dr. Samuel Johnson worked so strenuously, Henry Weston, Henry Cook, and John Hadfield. Rowland Stephenson, M.P., escaped to America with £70,000, spending the last night before his flight in St. Bartholomew's Hospital, of which he was the treasurer. The last forger to suffer the death penalty was Thomas Maynard in 1829; in 1837, after some years of discussion, capital punishment for forgery was abolished.

Why poisoners should choose arsenic, which preserves the body of the victim and can be detected many years afterwards by straightforward methods of chemical analysis, is one of the puzzles of criminology. The only explanation seems to be that the symptoms of arsenical poisoning are well known to simulate those of gastro-intestinal disease due to natural causes, and that arsenic is, or was, easily procurable for such purposes as killing weeds. The Armstrong case, of which a full report, with commentary, is given by Mr. FILSON YOUNG in the *Trial of Herbert Rowse Armstrong*,[7] must be fresh in the memory of most readers of the daily newspapers. It aroused great excitement at the time among the general public, and it had features of considerable interest for the medical and legal professions. The medical interest of the trial turned largely on the *post-mortem* findings, and on the symptoms of arsenical poisoning shown by Armstrong's wife on two occasions—in August, 1920, before her removal to an asylum, and in the following February, soon after her return home. It was common ground between the prosecution and the defence that she died on February 22nd, 1921, of poisoning by arsenic. The amount actually found in her body (3¼ grains) was the largest ever found by the late Mr. John Webster, the Home Office analyst, during many years' experience of such examinations. The legal interest turned largely on the admissibility, as evidence on the capital charge against Armstrong, of evidence pointing to the attempted murder by him (again with arsenic), eight months after his wife's death, of a fellow solicitor named Martin, between whom and himself some business difficulty had arisen. Armstrong's motives for murdering his wife seem to have been the desire to benefit under a new will, drawn up by him for her and irregularly attested in July, 1920, and the desire to marry again. But why he tried to murder Mr. Martin is almost inexplicable, unless one supposes he had acquired a sort of tolerance towards arsenic in other people's systems. However that may be, it was his attempt to do it again that aroused suspicion in the local doctor's mind, and from that time onwards "the slow but certain wheels of the criminal law began to revolve," until after a nine days' trial before Lord Darling at Hereford, and a four days' hearing in the Court of Criminal Appeal, Armstrong paid the penalty. The verbatim report of the proceedings is well arranged and accurately reproduced, and the introduction most readable.

[5] *Murder for Profit.* By William Bolitho. London: Jonathan Cape. (Extra post 8vo, pp. 320. 10s. 6d. net.)

[6] *Trial of Henry Fauntleroy and other Famous Trials for Forgery.* Edited by Horace Bleackley, M.A.Oxon. Notable British Trials. Edinburgh and London: William Hodge and Co. (Demy 8vo, pp. v + 260; 11 plates. 10s. 6d. net.)

[7] *Trial of Herbert Rowse Armstrong.* Edited by Filson Young. Notable British Trials Series. Edinburgh and London: William Hodge and Co., Ltd. (Demy 8vo, pp. x + 396; 5 plates. 10s. 6d. net.)

HUMAN INHERITANCE.

THE book on human inheritance[8] by BAUR, FISCHER, and LENZ, now in its third edition, remains a comprehensive and authoritative account of the facts of organic inheritance in man and of the implication of these facts. There are many slight modifications and a few additions in this new edition, as is to be expected in view of the rapid advances that are being made in genetical science and in our knowledge of the biology of man. The increase in the number of references bears witness to this. The part written by Baur shows less change than the others for the reason that even at the time of the last edition all the relevant general principles of genetics had been enunciated. The section for which Fischer is responsible contains many new data, particularly concerning the mode of inheritance of the physiological characters. Lenz, in his section, gives many more pedigrees, and the genetic basis of such traits as the criminal disposition is now discussed. A section on the biometrical methods of analysis has been added. The amazing activity of the American school of psychologists is reflected in this book, for there is a noteworthy addition to the discussion of racial mental differences. Moreover, far more attention is given to the results of the examination of twins, and emphasis is laid upon the urgent need for an active study of inheritance in such material.

The reader will find the book distinctly discursive, and may have to dig deep before he finds the treasure he seeks. However, the treasure is there for the seeking. It is a book of reference rather than a manual, but it would be well if every medical man at some stage of his career should make himself fully acquainted with the facts proving that organic inheritance plays an exceedingly important part in the maintenance of health or the production of disease. The examination of a patient commonly should include a study of his pedigree. In the reports on hospital patients required to be made by clinical clerks or their equivalents for the physicians during the later part of last century, much more attention was given to the history, family and personal, than seems to be the case at the present day.

NOTES ON BOOKS.

THE little book on serum sickness[9] by Drs. R. J. WEISSENBACH and GILBERT-DREYFUS contains a brief historical introduction, and is divided into five principal parts devoted to clinical questions, etiology, pathogenesis, prophylactic and curative treatment, and prognosis. In their clinical study the writers distinguish the following varieties of reaction: (1) early general reaction, (2) late general reaction, (3) local reaction in the skin, meninges, and joints, (4) focal reaction, as exemplified in the late subaxillary adenitis in diphtheria and the meningeal reaction in cerebro-spinal meningitis. Special attention is given to the atypical forms of serum sickness which have lately been described, such as amyotrophic paralysis, generalized adenopathy, orchi-epididymitis, pleuro-pulmonary manifestations, symptoms of suprarenal insufficiency, and affection of the alimentary canal and its adnexa. In their discussion of the pathogenesis of serum sickness the writers are inclined to attribute the early phenomena to colloidoclasia, while the late symptoms they regard as of toxic origin. With rare exceptions the prognosis of serum sickness is favourable. According to the latest American statistics only one death occurs in 75,000 injections. Hardly any notice is taken of the work of other than French writers. It is therefore not surprising to find that no allusion is made to the prognostic value of a well marked serum reaction occurring in diphtheria, to which several writers in this country have drawn attention.

A small French book on laboratory methods for the detection of tuberculosis[10] is a handy volume, obviously written by an experienced laboratory worker, which describes the many chemical and microscopical tests which may be used in the diagnosis of tuberculosis. The first part of the book describes direct methods, such as examination of stained films, inoculation of susceptible animals and cultural technique. The second part reviews indirect methods, such as serological tests, cytology, and chemical investigations. It is essentially a practical book, and will serve a very useful purpose.

Dr. PIERRE HULLIGER of Neuchâtel in Switzerland has written a little book[11] the main object of which appears to be to laud the treatment by chemico-therapy which he practises at the Mont-Riant clinic. Incidentally he examines treatments in high-altitude sanatoriums, at the seaside, by tuberculin, serotherapy, and pneumothorax, and finds them all wanting. Our object, he says, must be to cure consumptives "on the plain and in our towns." This, he thinks, can be done by the subcutaneous injection of a mixture of salts of copper, mercury, manganese, silver, tin, and arsenic. The injections produce a feeling of lassitude and sometimes a slight rise of temperature, but no local reaction; they cause, however, an intense congestion of all the tuberculous foci in the organism. Sometimes, though rarely, "reactivation" of latent foci is caused; and this, says Dr. Hulliger, has given him a "bad press." He finds the phenomenon useful, since it shows up the disease even when hidden in obscure corners of the body. Probably the only usefulness of Dr. Hulliger's book is in reminding us that none of the treatments for tuberculosis are very satisfactory as cures; but the directions he gives to patients in the matter of general treatment are sound and simply stated.

The seventh edition of *Hewat's Examination of the Urine*[12] has been revised by Dr. G. L. MALCOLM-SMITH. In addition to examination of the urine, sections are allotted to the investigation of the blood, sputum, gastric contents, and the faeces, and in this new edition sections have been added on fractional gastric analysis, renal efficiency tests, and examination of the cerebro-spinal fluid. This handy book, while insufficient as a guide to the more elaborate chemical investigations, contains the simple tests which are in common use, and will probably be even more popular than its predecessors.

[8] *Menschliche Erblichkeitslehre und Rassenhygiene.* Von Dr. Erwin Baur, Dr. Eugen Fischer, Dr. Fritz Lenz. *Menschliche Erblichkeitslehre.* Dritte, vermehrte und verbesserte Auflage. München: J. F. Lehmann. 1927. (6½ × 9, pp. xii + 601; 172 figures, 9 plates. M.16.)

[9] *Les Accidents Sériques: Prophylaxie—Traitement.* Par R. J. Weissenbach et Gilbert-Dreyfus. Collection des Actualités de Médecine Pratique. Paris: G. Doin. 1927. (5½ × 7, pp. 160. 15 fr. 40.)

[10] *Technique de Laboratoire pour le diagnostic de la tuberculose.* Par Ed. Moreau. Préface de A. Besredka. Paris: A. Maloine. 1926. (Imp. 16mo, pp. 196; 22 figures. 12 fr.)

[11] *Ce que tout Tuberculeux devrait savoir.* Par Dr. Pierre Hulliger. Paris: N. Maloine. 1926. (Pott 4to, pp. 132; illustrated. 10 fr.)

[12] *Hewat's Examination of the Urine and other Clinical Side-Room Methods.* Revised and enlarged by G. L. Malcolm-Smith, M.B., Ch.B., F.R.C.P.Edin. Seventh edition. Edinburgh: E. and S. Livingstone. 1926. (Roy. 32mo, pp. v + 228; illustrated. 3s. 6d. net.)

PREPARATIONS AND APPLIANCES.

Collo-Calamine.

COLLO-CALAMINE is an impalpably fine powder having the composition of calamine. Calamine, as is well known, is native carbonate of zinc prepared for medical use by elutriation. It is not mentioned in the current *British Pharmacopoeia*, but was official in that *Pharmacopoeia* of 1885, and is still extensively used as a cutaneous remedy. Its power of beneficial action depends upon the extent of surface possessed by a given quantity, or the degree of fineness into which the particles are subdivided. Collo-Calamine, which is placed on the market by the British Drug Houses, is of a fineness much beyond the ordinary. As suggested by the name, it is almost colloidal. It ought accordingly to give satisfaction to prescribers who prefer, as many do, the natural substance to the artificial zinc carbonate of the *Pharmacopoeia*.

A Water Heater.

A very simple water-heating appliance has been brought out by Triggs, Demaine and Co. (181, Queen Victoria Street, London, E.C.), under the name of the "Fox" water heater. We have had the opportunity of seeing it in action, and for cleanliness, simplicity, and efficient working it suggests an admirable fitting for the surgery. It is a storage apparatus, cold water automatically replacing hot water drawn off, and has two gas burners which, also automatically, are cut down to small jets when a maximum temperature is reached. Hot, tepid, or cold water as required can be drawn from the same tap by moving an indicator. When the hot water is drawn off the small jets expand to a full flame until the reservoir reaches its maximum capacity again. It appears to be free from fumes or smell, and certainly obviates the need for the use of matches or the manipulations of interlocking taps. The smallest type has a capacity of 1½ gallons, but the apparatus is made also with a capacity of 25 gallons for baths and hospital use. It is undoubtedly a very convenient type of water heater.

A Combined Ultra-violet Radiation Apparatus.

The difficulty of a choice of sources of ultra-violet radiation has been met by the Medical Supply Association, Ltd. (167-185, Gray's Inn Road, London, W.C.), in the shape of what they call their "Trinity" apparatus, which combines on one stand the three types of lamps now employed—namely, the quartz mercury vapour lamp, the tungsten arc lamp, and the carbon arc lamp. The three are provided at only slightly more than the cost of the single model, and the saving of floor space is obvious. The apparatus also permits of two lamps being run simultaneously, and of local or general irradiation from each lamp. It is designed for use on the direct current, but an electrolytic arc lamp rectifier is provided for an alternating current supply.

STEPHEN HALES, D.D., F.R.S.,

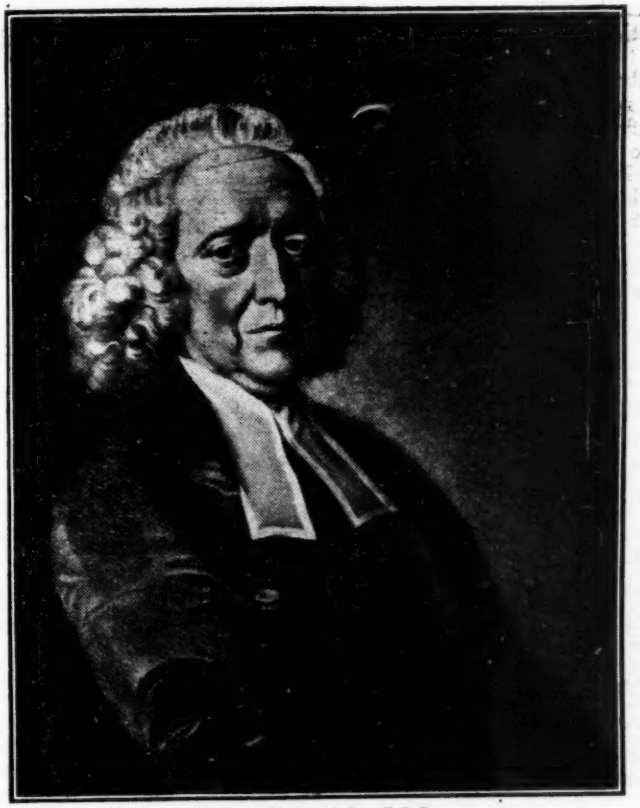
PHYSIOLOGIST AND BOTANIST.

CELEBRATION AT CORPUS CHRISTI COLLEGE, CAMBRIDGE.

THE Master and Fellows of Corpus Christi College, Cambridge, celebrated the anniversary of the birth of Stephen Hales, on Thursday, June 16th, by entertaining a large party within the College. During the afternoon the Parker collection and the plate belonging to the College were displayed. The Parker collection the College owes to Matthew Parker, who was Archbishop of Canterbury from 1559 to 1576; he had previously been Master of Corpus Christi College, and gave to it many manuscripts, books, and plate. To the University library he gave also manuscripts and books. At seven o'clock Dr. A. E. CLARK-KENNEDY, Fellow of the College, and assistant director of the medical unit at the London Hospital, gave a dissertation in the chapel. The guests were then entertained to dinner in the Hall of the College, and afterwards the Master and Mrs. Pearce held a reception in the Lodge.

At the time Stephen Hales lived (1677 - 1761) modern science was in its cradle at Cambridge, and if we would review all that has been accomplished in the cause of science in the University down to the present time, it is to that period we must turn for a knowledge of the beginnings of the wonderful movement which bore such fruit in later years. It is not too much to say that the birth of science at Cambridge was due to the mighty influence of that glory of the University, Isaac Newton, who planted there the experimental method in science. Since his day Cambridge has been under that domination, and Hales was one of the men who carried on the splendid tradition. But in this Hales was not alone at Corpus. Dr. Clark-Kennedy mentioned the close association existing between Hales and Dr. William Stukeley, who was a fellow student at Corpus Christi College, and from the diary and letters of Stukeley, published by the Surtees Society, we may learn how ardently the two friends pursued their inquiries into science by the experimental method. As Dr. Clark-Kennedy reminded his hearers, they rambled together over Gog-Magog hills and Cherry-Hinton Moor collecting simples, hunting for fossils, and catching butterflies, "having contrived an instrument for taking them." Together they studied anatomy, dissecting dogs and other animals; and attended the public lectures of Vigani, first professor of chemistry, and witnessed the "chymical" experiments he performed in the rooms over the Gateway of Trinity, which had been the laboratory of Sir Isaac Newton. Hales applied himself also to astronomy, and, having acquired a "perfect knowledge of the Newtonian system," contrived a mechanical model to demonstrate the movements of the planets. Hales was appointed to the parish of Teddington, Middlesex, at the end of 1708, and although he afterwards received other preferments, he continued for the most part to reside there until his death on January 4th, 1761, in his 84th year. It was there, as Dr. Clark-Kennedy said, that he made experiments of fundamental importance, on the circulation of the blood, the flow of sap, the chemistry of respiration, and the growth of bone; and "by his work on ventilation established one of the first principles of preventive medicine." By repeating many of Robert Boyle's experiments he had learnt the value of the experimental method, and quoted with approval the dictum that "it is not within the compass of human understanding to assign a purely speculative reason for any one phenomenon in nature."

Stukeley in after-life became famous as a physician and an antiquary, and it was owing to his activity that the Antiquarian Society was re-established. But before them two members of Corpus Christi College—William Briggs (1642-1704) and Edward Tyson (1650-1708)—had contributed to the advancement of science. William Briggs, physician to St. Thomas's Hospital, was one of the first in this country to write on the anatomy and the functions of the eye. He it was who taught Newton all he knew about the eye, and first enunciated the theory of vibrations as an explanation of the phenomena of nervous action, while Edward Tyson was one of the first in this country to study comparative anatomy, and the beautiful drawings he made to explain the anatomy of various animals form one of the most treasured possessions of the College of Physicians. In later times two other members of Corpus Christi College attained distinction in medicine and science. Dr. David Pitcairn (1749-1809), physician to St. Bartholomew's Hospital, was the first to point out the close association between rheumatic fever and heart disease; and, coming down to our own days, Dr. Bond, the Regius Professor of Physic at Cambridge from 1857 to 1882, filled that chair with dignity and distinction. It will be seen, therefore, that Corpus Christi College, although only thirty-seven members of the college graduated in medicine from the year 1500 to 1850, produced five men who all left their mark upon the profession they adopted—surely a record of which the college may be proud. During the same period of three centuries and a half there were some fifteen hundred medical graduates from the whole University.



STEPHEN HALES, D.D., F.R.S.
(From a mezzotint in the collection of Dr. Arnold Chaplin.)

As evidence of the activity of the scientific spirit in Cambridge when Hales was in residence at Corpus, attention may be drawn to the foundation of chairs in various sciences at about that time. Thus the chair of chemistry was founded in 1703, the Plumian chair of astronomy in 1707, that in anatomy in 1707, in botany in 1724, and in geology in 1731. The foundation of these chairs was the beginning in the University of that study of natural sciences which has produced such notable results in modern times.

THE DISSERTATION.

In the course of his dissertation, to some of the earlier passages of which we have already referred, Dr. Clark-Kennedy said that to Hales—primarily a biologist but trained as a physicist—the circulation of the blood, discovered rather less than a century before him, must have presented a fascinating study, and his first scientific endeavour was to make a complete quantitative investigation of the dynamics of the circulation.

The Circulation of the Blood.

"Since we are assured," Hales wrote, "that the animal fluids move by *hydraulic* and *hydrostatical* laws, the likeliest way therefore to succeed in our inquiries into the nature

of their motions is by adapting our experiments to those laws." He therefore devised his "haemastatical" method, which consisted of the application of the principle of the manometer to animal physiology, and performed a vast number of experiments of great technical difficulty, not in a well equipped laboratory, but in the parsonage at Teddington. By tying tubes into the arteries and veins of living animals he was the first man to record blood pressure. In so doing, not only did he advance our knowledge of cardio-vascular physiology by a definite and important step, but at the same time laid the foundation of a valuable clinical method in the study and diagnosis of disease. For this performance Hales is justly famous. But in addition he investigated almost all the mechanical aspects of the circulation, and made a more complete study of cardio-dynamics than even Lower had done before him. His description of this branch of physiology is so complete, so quantitative, so essentially modern in all its tendencies, that it reads like a chapter in a present-day textbook. By recording the pulse rate during life, and then injecting the heart with wax, he computed the circulation rate in horses, cattle, deer, and dogs. He showed that in large animals the blood flow is relatively less than in small, but, in the absence of a true conception of respiration and metabolism, he failed to realize the significance of this result. He estimated the actual velocity of the blood stream in the different arteries and veins. He measured the velocity of the blood in the tissue capillaries by observation with a microscope, and compared it with indirect calculations of the velocity of the blood in those of the lungs. Studying blood flow in the tissues, he estimated the capillary blood pressure and demonstrated vaso-constriction by cold, vaso-dilation by heat. Lastly, by pointing out that the heart responds to increased venous return by increased systolic output, he laid the foundation of the conception now known as "Starling's law."

Movement of Sap.

Hales was essentially a comparative physiologist. He alternated between experiments on plants and experiments on animals. While endeavouring to stop the bleeding of an old stem of a vine, which was cut too near the bleeding season, it occurred to him to make the following experiment.

> Having tied a piece of bladder over the transverse cut of the stem I found the force of the sap did greatly distend the bladder, whence I concluded, that if a long glass tube were fixed there in the same manner, as I had before done to the arteries of several living animals, I should thereby obtain the real ascending force of the sap in that stem, which succeeded according to my expectation; and hence it is that I have been insensibly led on to make farther and farther researches by variety of experiments.

Applying this method, he found the sap pressure in the vine in the bleeding season to be "five times greater than the force of the blood in the great crural artery of a horse; seven times greater than the force of the blood in the like artery of a dog; and eight times greater than the blood's force in the same artery of a fallow doe."

Growth in Plants and Animals.

Hales also devised the method of studying the growth of plants by marking the stems and leaves at equal intervals, and was led on to apply a similar method to the growth of bones. He wrote:

> "The tender ductile bones of young animals are gradually increased in every part that is not hardened and ossified; but since it was inconsistent with the motions of the joints to have the ends of the bones soft and ductile, as in vegetables, therefore nature makes a wonderful provision for this at the glutinous serrated joining of the heads to the shanks of the bones, which joining, while it continues ductile, the animal grows; but when it ossifies, then the animal can no longer grow: as I was assured by the following experiment, viz.: I took a half grown *chick*, whose leg-bone was then two inches long; with a sharp-pointed iron, at half an inch distance, I pierced two small holes through the middle of the scaly covering of the leg and shin-bone; two months after I killed the *chick*, and upon laying the bone bare, I found on it obscure remains of the two marks I had made at the same distance of half an inch: so that that part of the bone had not at all distended lengthwise, since the time that I had marked it; notwithstanding the bone was in that time grown an inch more in length, which growth was mostly at the upper end of the bone, where a wonderful provision is made for its growth at the joining of its head to the shank, called by anatomists *symphysis*."

This experiment, usually attributed to John Hunter, born in 1728, was actually performed by Hales some years before that date.

Hales's interest was deflected to the chemistry of respiration by an accidental observation that bubbles of air ascended with the sap.

Chemistry at that time, Dr. Clark-Kennedy said, was an empirical and largely speculative study. The conception of chemical elements had not yet been formed, and chemical substances were still described and classified according to their properties. In 1660 Robert Boyle had demonstrated that a candle became extinguished, and that an animal died, when placed in an evacuated vessel. Nine years later Lower discovered that blood takes up air. At about the same time Mayow (who was a Fellow of All Souls' College, Oxford, and practised medicine in Bath) came to the conclusion that it was not the whole air, but a part of it only, which was essential for respiration and combustion alike; this fraction he called the *spiritus nitro-aereus*. Thus Mayow virtually discovered oxygen, and laid the foundation of a true conception of animal heat, when he supposed that this arose from the combination of his nitro-aereal spirits with the sulphureous particles of the blood. Mayow clearly realized that a part of the air went into combination with the blood, but he failed to realize that anything came out. Mayow's work, however, received but scant attention, and thirty years later knowledge was put back over a century when Stahl introduced his phlogiston theory. According to this conception, which dominated biology and chemistry for over a hundred years, when a substance burned, phlogiston departed from it. The body suffered a loss, it became dephlogisticated. Stahl, rejecting the idea that animal heat was due to chemical action, returned to the old view that it arose from friction of blood in the vessels, while his pupil Haller, writing only a few years before Hales died, denied that air entered into combination with the blood, so completely had the work of Mayow and Lower been neglected. Not till 1754 did Black deal his death blow to the phlogiston theory when he prepared carbon dioxide, and not till twenty years after Hales's death did Lavoisier enunciate the true principles of respiration, combustion, and animal heat.

Applying his "statical method," Hales demonstrated that plants absorb considerable quantities of "air." By distilling vegetable substances he showed that plants contained "air." He came to the conclusion that "air" enters into the constitution of plants, and that an important function of the leaves was absorption of this form of nourishment. "It is by this amphibious property of air," he wrote, "that the main and principal operations of nature are carried on"; and then came this significant sentence—"May not light also, by freely entering the expanded surfaces of leaves and flowers, contribute much to the ennobling the principles of vegetables?" Again, as Michael Foster pointed out, Hales was the first man to give a clear enunciation of the existence of gases in both a combined and free state.

True to his comparative physiology, from absorption of air by plants he turned his attention to respiration in man. He repeated Mayow's experiment on the respiration of animals. Mayow had shown that animals absorb a part of the air they breathe, but Hales carried things a step further when he came to the conclusion that respiration in some way modifies the properties of the air left over so as to make it unfit both for life and for combustion. Thus he was led to experiment on himself, and to perform the first rebreathing experiment. A little later he devised an apparatus with inspiratory and expiratory valves so arranged that the expired air had to pass through diaphragms of cloth before being inspired again, and observed that when these diaphragms were moistened with a solution of "sal tartar," and then replaced, rebreathing could be continued for five to eight minutes. Moreover, the diaphragms increased in weight to a greater extent than he could account for by absorption of water only. If Mayow can be said to have discovered oxygen, surely Hales

described carbon dioxide! Throughout Hales's writings there is no mention of the phlogiston theory. By this silent refusal to follow Stahl he kept alive the spark of truth that Mayow had lit, to be rekindled more than a century later by Black, Priestley, and Lavoisier. But if only he had followed Mayow a little more literally, and conceived, as Mayow had, of different kinds of gases, instead of one "air" with variable properties, he might well have arrived at a true conception of respiration. Be this as it may, Hales's researches on respiration had a great practical outcome in his work on ventilation.

Ventilation.

Incidentally, Dr. Clark-Kennedy mentioned that Hales invented methods of purifying water and of salting animals whole, and advocated the addition of acid to keep fresh water sweet, and the use of burning brimstone for the prevention of "weevil and meggots" in ship's biscuit, and for preventing the rise and spread of "infectious distempers." The first-fruit of his study of ventilation was a method to be applied to ships by means of hand bellows; it was used in some of the ships of the Royal Navy, and also in vessels engaged in the slave trade.

In entering the City of London from the west, Dr. Clark-Kennedy continued, the traveller of those days must have been confronted by a curious spectacle. Newgate, the ancient gate of London built by the executors of the celebrated Richard Whittington, thrice Lord Mayor of London, and only partially destroyed in the Great Fire, had been rebuilt with considerable magnificence.

> "It consisted of a carriage archway in the centre; on the side, the footpath was continued through it, which supplied a shelter for two or three old women, who fried small sausages for sale: and in the centre of it was an entry to the chief prison of the city: the mendicant prisoners for debt stood within the iron grated door, vociferating their constant supplication for benefactions to a leathern bag which they drew in as often as it was touched: the upper chambers of the buildings constituted the prisons for felons, for whom a door was opened on the South side adjoining the old wall, and it was from this door that the malefactors were received into the cart for their last journey to Tyburn. Upon the summit was a machine for air, invented by Dr. Hales."

The windmill ventilator erected by Hales on Newgate by order of the aldermen of the City of London in 1752. (From a print in the British Museum.)

In 1750 a tragedy had occurred during the trial of malefactors at the Sessions House in the Old Bailey. The Lord Mayor, two judges, and a total of sixty persons had died of the gaol distemper, communicated to them by the felons from Newgate. The aldermen of the City of London, naturally seriously alarmed, consulted Hales, and decided to install ventilators in Newgate to be worked by a windmill erected on the leads. When the system was complete, Hales made a tour of inspection of Newgate, and rejoiced to see the ventilators "drawing like large heavy lungs at the rate of seven thousand tuns of foul air per hour out of the different wards of the prison." Hales's ventilators were also installed at the prison in the Savoy (London), in the gaols at Northampton, Shrewsbury, Winchester, Maidstone, Bedford, and Aylesbury; in the London small-pox hospitals, at St. George's Hospital, and in hospitals at Durham, Winchester, and Bristol, and even at Naples. They were introduced also into the naval and military hospitals and prisons at Gosport, Portsmouth, and Plymouth.

Wherever Hales's ventilators were installed the air in the wards is said to have been rendered much purer, and the mortality among the inmates from the gaol distemper considerably reduced. But typhus is due to the bites of infected lice, and not to foul air, as Hales supposed. No amount of ventilation, however perfect, could have abolished the gaol distemper. Hales's bellows ventilator has gone. Hospitals and prisons are so built in these days that mechanical ventilation is seldom necessary. But his principle of the forcible propulsion of air still persists, and adequate ventilation remains one of the first principles of preventive medicine. Hales must therefore stand, not only a great biologist, but one of the pioneers in public health.

In 1756 Hales performed his last experiment. He placed an equal number of gudgeon in two pails of pond water; the water in one was ventilated with air, the water in the other allowed to remain stagnant. The fish in the former remained well, but those in the latter, the unventilated water, soon "turned sick, came up for air and showed uneasiness, turned belly upwards, and then died." He commented on this experiment as follows:

> "Hence we see the Benefit of frequently replenishing the Water with fresh Air, which we find is necessary not only to preserve the Life of Land Animals, but also of Fish; as also the Use of their Gills, to spread in thin Sheets fresh Supplies of Water, that they may the better come at the Air in the Water; for which Purpose both Sides of their Gills are furrowed with many fine Furrows, thereby to enlarge their Surfaces."

So at the age of 79 he returned from his applied science to his comparative physiology again, and after the lapse of forty years completed his long series of experiments on respiration.

Hales had been elected a Fellow of the Royal Society in 1718, and later his reputation as a scientist became international. His books had been translated into all the chief European languages. In 1753 he was elected one of the eight foreign members of the Royal Academy of Sciences in Paris.

Two other incidents in Hales's life were described by Dr. Clark-Kennedy; the one was the share he took in warning the public against gin drinking. The other was his unfortunate consent to be one of the sponsors of Joanna Stephens, to whom Parliament was induced to give £5,000 for divulging her method of dissolving the stone.

Though Hales was so interested in experimental research he did not neglect his duties as parish priest of Teddington, but served the parish with the same energy and zeal. He made the women of his parish do public penance for irregular behaviour; he induced the lord of the manor to enlarge the churchyard; he added an aisle to the church, and erected a new tower with a big bell, meeting part of the expenses out of his own pocket. He also arranged for a new parish water supply.

Of his character one of his contemporaries said: "He possessed a native innocence and simplicity of manners which the characters of other men and the customs of the world could never alter."

Stephen Hales died at Teddington on January 4th, 1761, in the eighty-fourth year of his age. His monument stands in Westminster Abbey, but his body lies buried, according to his own wish, under the tower which he had himself built for the church he had loved so well. The inscription on the stones of the floor of the tower records the simple facts of his life and death, but there is no epitaph written on his grave. To-day, however, 250 years after his birth, let us adapt the words John Wesley wrote of him. "How well did Science and Religion agree in this man of sound understanding."

British Medical Journal.

SATURDAY, JUNE 18TH, 1927.

THE ECLIPSE.

A TOTAL eclipse of the sun is, by the common consent of all history, an amazing phenomenon. It has not only amazed and filled its beholders with an undefinable fear; it has sometimes caused them to mend their ways, and even brought a war to an end. Among the fierce denunciations by Amos of national evils and his forebodings of the calamities that would follow, the climax of horrors is reached in the lines: "And it shall come to pass in that day, saith the Lord God, that I will cause the sun to go down at noon, and I will darken the earth in the clear day." It is supposed that this is a reference to the eclipse of 763 B.C., which was total at Nineveh, and of which there is a record in a cuneiform inscription. The old sense of fear died hard. In 1715 Halley thought well to warn his fellow citizens when a total eclipse was due to be seen in this country, thus: "The like eclipse having not for many ages been seen in the southern parts of Great Britain, I thought it not improper to give the publick an account thereof, that the sudden darkness wherein the stars will be visible about the sun may give no surprise to the people, who would, if unadvertized, be apt to look upon it as ominous and to interpret it as pertaining evil to our sovereign lord King George and his government, which God preserve." But to know what is the meaning of this awful dousing of the sunlight is not to diminish the magnificence of the spectacle, any more than the knowledge of the causation and the frequent experience of thunder lessen its impressiveness.

The sun each year appears to complete a "great circle" of the heavens. The moon makes its circuit every month. If the circles were coincident there would be a monthly eclipse every new moon, but they do not coincide, being inclined to one another at an angle of some five degrees. These circles must cut one another at two opposite points, the "nodes." When the new moon is at or near one of these nodes it intervenes between sun and earth, and an eclipse is seen somewhere. The sun is vastly larger than the moon, but the moon is much nearer the earth, and the relation of the two conditions is such that the smaller moon can completely blot out the greater sun, and cause the total eclipse. When the sun is thus obscured its radiance is revealed to the eye in an appearance that has no equal in luminous phenomena. There is the gradually increasing darkness, the shining of the stars, then around the black disc of the moon blaze out vast ruddy flames of the sun's conflagration, and the pearly hues of the "corona" are flung far into the sky. One moment, and it is gone. The light returns.

It is 200 years since this was seen in any part of these islands. If only the sky be clear of clouds, on the morning of June 29th it will be seen again. The conical shadow of the moon will sweep across North Wales and the northern counties of England from Criccieth to Hartlepool, travelling the couple of hundred miles in a couple of minutes; and observers of total eclipses in other parts of the world say that it can be seen, even though the sun be obscured, by anyone who will resolutely turn his back to the sun. At any one place on the line of totality the darkness will last for a score of seconds. Since the apparent movement of the sun is from the north-eastern sky, the shadow will come out of the south-west, and is due to approach from the Atlantic at 5.23 a.m. Greenwich mean time, or an hour later by our summer-time clocks. It takes the line of Criccieth and Abergele in Wales; Southport in Lancashire; Settle, Richmond, and Hartlepool in Yorkshire, where it is due to pass away at 5.25. Fifteen miles on either side of this line the eclipse will be nearly total. A glance at the map will show what extreme variations of terrain it will traverse—crowded industrial centres and moorlands almost uninhabited.

The old-time fear of the eclipse has gone, and for that very reason there is the more cause for fear of carelessness in viewing it. The warnings against the risk of "eclipse blindness" are no mere old wives' tales. The risk is real. It is not exceptional; it is the same as the risk to the sight of looking at the sun on any day that it shines, but this is so difficult that few, save children, attempt it. There is a like risk in the electric arc, and, to a lesser extent, in looking at a powerful gas-filled glow lamp. But it is a risk that can be easily escaped. There are two ways whereby we may protect the eyes. Both are familiar. In any fog we can look at the red disc of the sun with impunity. Properly fogged glass will be a protection. We can look at the sun at midday through a narrow crack between our fingers with comfort, so a pin-hole screen will furnish good protection. Of the two the fogged glass is the better. There is less risk of careless use than with the pinhole, for that may vary in size, and its size will vary according to its nearness to the eye—the closer it is held the larger the hole becomes, and the less protection it will give. Not every fogged glass will give protection. The fogging should be enough to allow one to look with open eyes at an electric arc a foot away from the eyes, or with equal ease at the filament of a gas-filled electric lamp of high power. One should be able to view the filament as a fine reddish pattern without glow, and without feeling the least suggestion of after-effect in one's eyes when ceasing to look at it. A perfect glass is made by using together two pieces of coloured glass, one red and the other green; each should be of such depth of tint as will only allow light of its own colour to pass—red through the red glass and green through the green. It follows that if one tries to look through the two glasses together nothing will be seen, the window will be black; but there will be sufficient incompleteness in the saturation of colours in the glasses to allow intense illumination to pass, and through these two glasses the sun at the zenith is a clear pinkish disc, and the most brilliant electric arc a pink spot. The red and green glass of the once familiar hall window of an early Victorian house would make an admirable protection.

There are a number of specially prepared screens on the market. Two have been submitted to us. One is a film marketed under the name of "Eclipsia" by Messrs. Hamblin; it has been worked out by Dr. Judd Lewis, and limits the spectrum by cutting out the violet end completely as well as by reducing illumination. It is a simple and effective contrivance, and costs only a small sum. Another is a screen furnished with a couple of optically ground dark glasses, issued by Messrs. C. Baker of High Holborn; it also is inexpensive and effective. The film has a notch for the nose, but the glass screen needs to have its mount cut. Many will use opera-glasses or telescopes. With

these it is imperative that the screen should be easily removable and as easily reaffixed. It should not be a fixture, for clear glass is needed to view the actual eclipse, but the reapplication of the screen is imperative immediately the sun begins to show again.

There are two reasons for this care. The temporary reason is that if the sun be looked at unveiled before the eclipse the eye will be so exhausted that the wonder of the eclipse will not be seen, and the labour of the journey will be unrewarded by a sight of the spectacle. There is, however, a much more serious reason. Exposure to brilliant excessive light causes actual injury to the retinal elements of the eyes, and this may be permanent, causing a central scotoma or blind spot. Fundus changes due to such exposure are well known; there are minute spots of degeneration. There is therefore every reason for members of our profession to inculcate care in viewing the eclipse, the more especially since we understand that arrangements have been made to take large numbers of school children to places on the line of totality so that they may see the phenomenon. Children are more susceptible than adults to the risks of damage to the eyes by excessive light, for the lenses of their eyes are clear and translucent, whereas adult lenses are more or less dense and yellow. The school authorities responsible for these expeditions should be forearmed for the occasion; accidents would be nothing less than "culpable negligence." Totality lasts but twenty seconds, and is followed by the blinding flash of the uncovered sun.

GENIUS AND THE AMERICAN PEOPLE.

IN recent years Americans have eagerly pursued their pasts, seeking ancestry that should endow them with genetic reasons for their successes. Latterly, however, they have turned their eyes towards the future, seeking their genetic destiny.[1] There is almost humour in the thought that it should be an American who perforce must teach that great democracy that men are not born free and equal, but bound and unequal, that ability cannot be the birthright of every individual, but that for genetic reasons it is a familial affair. The wealth of a nation, spiritual and cultural, is ultimately determined by the number of its superior families, rich in possessions that social legislation may depreciate but can never destroy.

For the student of human biology the United States is a vast and fascinating experiment. It is not yet a race biologically: it is not yet a nation. A great proportion of the individuals who have played their parts in the making of the nation that is to be have not been, it is safe to assume, the ablest specimens of the peoples to which they belonged. Success of a kind was easier of attainment there than in the older countries, for there was plentiful scope and abundant recompense for arduous labour. There has been, up to now, a huge hinterland into which the relatively incompetent could always retreat, so that in the past selection has not operated at all scathingly. Into this hinterland, too, would go some of the most competent, fired by the joys of grappling with the bigness of Nature, to spend their efforts in creating and not in conserving. Acquisition of material possessions has been so simple that a man held property lightly, gambled with fate, won and lost, and won again. All this is changing rapidly, and America is tending to become conservative. Acquisitions, material and spiritual, are now being valued and conserved.

The individual in his self-expression is largely a reflection of his environment. Ability, when possessed, is polymorphic. There is every reason to think that there has gone to the United States germ plasm potentially far more valuable to that country than were the individuals who bore it to their generations. There is every reason to hold that in America to-day there are the genetic components of all the qualities that make for human greatness as well as for human wretchedness. Changing social conditions, the shuffle and deal of marriage, will, it may be assumed, ultimately lead to the replacement of anthropologically the most mixed people the world has ever known by a nation with a past and with a point of view.

It is not to be expected that as yet there can have been an American genius, though, of course, there is no reason why a genius should not have immigrated in the form of either a gamete or a zygote into the United States. There have been and are great men there, but they are all products of the Old World. Political severance does not involve a discontinuity in the stream of germ plasm. When the United States has become a nation, then a typical American genius will doubtless appear. The possibilities of this are immense, for the United States has drawn largely upon stocks that have produced genius. Any sufficiently populous country, in the absence of mutation among its population, and in the absence of immigration, can be expected to reproduce the great men of its past. The elements of greatness, when once present in a people, are not easily lost. In the case of a country like America the chance of a really great man appearing depends upon the variety and number of genetic components brought into that country by immigration.

In America search is being made for the constituents of greatness. As a corollary to this, inquiries are being instituted to determine how far genius is due to organic inheritance, to social inheritance, and to education. When this is known it will be possible to guide incipient genius to full expression. The early mental traits of a number of men of acknowledged pre-eminence have been examined, every remaining scrap of their correspondence has been studied, and to each of these men an "intelligence quotient" has been ascribed. The method of assessing potential brilliance is necessarily faulty. The data upon which the estimates are made are incomplete, and in many instances cannot be regarded as truly representative, and no control series relating to the early mental traits of mediocre men is available for comparison.

However, these estimates, faulty as they are, are taken as standards of the measure of developing genius, and against them are placed the records of 600 gifted children, selected by the teacher and sifted through a Stanford-Binet psychological test out of a quarter of a million Californian school children. These children and the parents were examined in almost every conceivable way, questionaries were rained upon them, anthropometrical and medical overhauling was thorough, probings as to interests, character, personality, and so forth were deep and searching, and there can be no doubt that the very best use was made of the tools which at the present are available for the analysis of the individual. The difficulty that lies in the way of a ready acceptance of the value of these tests is very real. There is as yet no unanimity among psychologists themselves as to which system of psychological analysis is the best. Moreover, we cannot be sure in the present state of knowledge that

[1] *Genetic Studies of Genius.* Edited by Lewis M. Terman. Assisted by several contributors. In two volumes. Stanford University, California: Stanford University Press; London: G. G. Harrap and Co., Ltd. 1926. (6¼ × 9½. Vol. I., pp. xiii + 648, 35 figures; Vol. II, pp. xxiii + 842, 10 figures, 49 tables. 21s. net each volume.)

potential genius would not slip through this sieve of the intelligence quotient test. Again in this particular investigation no control series was studied.

But this much can be said and should be said: This study is the most comprehensive and the most reasonable that has yet been made. It represents years of tremendously hard and careful work that will not be wasted. Imperfect as it is, it will serve its purpose if only by emphasizing the need for refinements in the existing methods for the analysis of personality. Its greatest value, however, lies in the fact that it demonstrates beyond all doubt that nations are taking stock of their most valuable possession—the germ plasm of their people; that they recognize that for the fashioning of the leaders by whom further civilization shall be guided the greatest care must be shown, not only in the choice of the methods of education, but also of the material to be trained.

THE HARVEY TERCENTENARY.

NEXT year, under the auspices of the Royal College of Physicians, will be celebrated in London the tercentenary of the publication of Harvey's epoch-making book, the *De Motu Cordis*, in which, by convincing experiment and accurate reasoning, he demolished for ever the thousand-year-old theory of Galen concerning the circulation of the blood, and in its place erected on a sure foundation his theory, which has been accepted by the world ever since. As we have already intimated, the plans of the Royal College of Physicians for the celebration of the tercentenary of this event are comprehensive, and no pains have been spared to make the function fully worthy of the great occasion. Delegates from all countries will gather in London to offer their tribute to the memory of the first and greatest of physiologists. Sometimes this country has been held to be unmindful of the anniversaries and centenaries of the conspicuous work of her great sons, but in this case it is hoped that the programme in the contemplation of the Royal College of Physicians will remove that reproach, and will show that we hold in deepest honour and reverence the memory of William Harvey, one of whom this country may well be proud. But while we are celebrating in London in befitting form the great work of Harvey, we should turn our thoughts to the quiet little country church at Hempstead in Essex, where the mortal remains of Harvey repose in a sarcophagus which in 1883 was provided by the Royal College of Physicians—an act of piety it owed to the memory of its most distinguished Fellow. The sarcophagus is now safe from the ravages of time, but the church in which it is placed is in a parlous state. The church tower has fallen down, and of the five bells one, the tenor, was shattered by the fall. The other four escaped injury, and are hung in a shed in the churchyard. A comparatively small sum of money would rebuild the tower, and render Hempstead Church a fitting abode for the great Dust it shelters. Already some money has been obtained. Surely, while we hold Harvey in reverence, funds will be forthcoming for the accomplishment of this duty of all those who venerate his name. The honorary treasurer of the fund is Mr. A. W. Ruggles-Brise, Spain's Hall, Braintree; cheques should be crossed Barclays Bank, Saffron Walden.

THE VALUE OF SCIENTIFIC THEORY.

SIR J. J. THOMSON, O.M., in the tenth Silvanus Thompson Memorial Lecture which he delivered before the Röntgen Society last Tuesday evening, made it evident how tentative and hypothetical is the whole subject of the structure of the atom. He likened the problem confronting the physicist to that of an engineer who is called upon to design a machine, but from whom dimensional and other requirements are withheld. Equally able engineers in such a case would make quite different guesses. But it did not follow that the tentative working hypothesis was without value. Scientific theory, he said, was not a creed, but a policy—it was something which should direct and suggest experiment. The simple working theory which presently turned out to be untenable might nevertheless have made for progress in a way not possible to the more elaborate theory which, while it was less open to objection, did not stimulate inquiry. Until we had much more experimental knowledge, said Sir Joseph Thomson, tentative theories must content us. What was wanted was an increased number of experiments on the properties of the atom, and it was important that those experiments should be of as many different types as possible. The great majority of the experiments hitherto made had been on the spectroscopic properties of the atom; this was natural, for such experiments could be made with great accuracy, and the technique was well known. But, after all, the atom had other properties besides spectroscopic ones; from some points of view those other properties were of even greater importance, and he was not sure that the spectroscopic was the best method for distinguishing between different kinds of atoms. The same tunes could be played on many different instruments, and the tune was not always indicative of the instrument on which it was played. He looked forward to experiments on the magnetic properties of the atom, the deflection of the proton when moving through solids, the deflection of electrons of different speeds when moving through atoms of the inert gases, and to experiments on the chemical properties of gases when electrified. Much had yet to be learned about the electron and the proton, and he could not think that the physicist would always be content to think of just two little spherical masses, one positive and the other negative, as a sufficient explanation of the greatest of all physical mysteries. In concluding his lecture he put forward the view that the electrons and protons were not termini, but avenues leading to new regions as yet unexplored. The conception of the atom which he had in mind, as tentative as any other, was of a series of "thin" electrons arranged concentrically, separated by finite distances, the electrons being in equilibrium, not describing orbits, but statical, and occupying fixed positions. In fact, as he imagined it, the atom was more like a crystal, with a regular and orderly distribution of electrons around a centre, than like the planetary system, with which it was so often compared. One of the great advantages of the theory which supposed a statical or crystalline distribution of electrons within the atom was that it could be so much more easily visualized than could a system in which multitudes of electrons were supposed to be describing orbits in a kind of solar system—a thing which always made his own head whirl even as the electrons were whirling, and recalled the line, "For nothing's really anywhere, but always somewhere else."

THE CHAIRMAN OF COUNCIL.

SIR ROBERT BOLAM was elected by the Council of the British Medical Association as its Chairman, in succession to Dr. J. A. Macdonald, during the Annual Meeting at Cambridge in 1920. In 1923 at Portsmouth he was re-elected for a further term of three years. Last year at Nottingham he consented to serve again, but only for twelve months. On June 8th, during the last Council meeting held under his chairmanship in the house with which his name will always be associated, his colleagues joined in paying him a personal tribute. This took the form of a complimentary luncheon, in the large committee

room and the presentation of a small gift. Sir Jenner Verrall, as the senior member of Council, took the chair. A formal account of so informal an occasion would be out of place, but it should not pass unrecorded. There were only two toasts—the Patron of the Association, His Majesty the King; and the Chairman of Council, Sir Robert Bolam, M.D., LL.D., F.R.C.P. Sir Jenner Verrall was in his happiest vein, and to those who know him that is saying enough. It was a short speech in which manner and matter were matched to perfection. He touched lightly on the peculiar virtues of the outgoing Chairman of Council, his genius for construction, and his great services to the Association. The confidence felt by the Council at Cambridge seven years ago had, he said, been more than justified. Sir Jenner Verrall ended by handing to the guest in the name of the hosts a gold-mounted Swan fountain pen, remarking that our ancestors, if they had tried to express their feelings in the same way, would no doubt have chosen a quill from a bird about to sing its last song. The toast, it need scarcely be said, was drunk with musical honours. Sir Robert Bolam, speaking as briefly in reply, thanked his colleagues for this compliment, and told them why he felt it right and wise to give up an office which had meant so much to him. His hobby, he said, had long been team-work, and his work on the Council had been happy because it was done by a band of brothers. He named two colleagues out of many who had helped him, because in a special way they had made easier the difficult early months of office—Sir Jenner Verrall and Dr. Macdonald. As for the officials to whom he owed so much, he believed that the secret of success in the work of the Association lay in a careful balance between the permanent staff and the voluntary officers. Having thus thanked and gently admonished his fellow councillors, the Chairman whom they had honoured in this friendly fashion called them back to their duties in the Council Chamber.

THE NATIONAL MUSEUM OF AUSTRALIAN ZOOLOGY.

IN 1924 the Federal Parliament of Australia, knowing the fact that the unique native fauna of the Commonwealth was fast disappearing, and recognizing its importance to medical science, founded the National Museum of Australian Zoology. It was a wise and statesmanlike act, the full effect of which is only now beginning to be seen. Dr. Colin Mackenzie was appointed Director, with the title of professor of comparative anatomy. It was a museum with a difference. In the previous year Professor Mackenzie had presented to the Commonwealth his specimens of living native animals, together with the buildings and fencing on the Research Reservation at Healesville. He had given also his collection of macroscopic and microscopic specimens, numbering many thousands; and these now form the basis of the museum collection. Each specimen has a direct application to some medical or surgical problem. Nothing quite like the collection of normal histological preparations from reptiles, monotremes, and marsupials, with which human or other mammalian tissue can be compared, exists anywhere in the world, and we are glad to know that illustrated atlases describing the collection are being prepared for publication—a huge enterprise which has been begun not a day too soon. Early in 1923, when commenting on the announcement that the Commonwealth Government had passed an Act to establish a Museum of Australian Zoology, we observed that there was clearly an obligation on Australia to preserve a full series of specimens, since the whole indigenous fauna of Australia seemed only too likely to follow Tasmanian man to extinction. The Commonwealth Legislature has now gone rather further than we hoped, for it has not only allotted a site for the National Museum of Australian Zoology at Canberra, the new capital of Australia, but the Federal Capital Commission has provided a site for a zoological park or reservation, in which will be kept living specimens of Australian and Tasmanian native animals in their natural state. The area of the site for the museum, laboratories, and lecture theatre is about five and a half acres, in a magnificent situation on Acton Hill, facing Parliament House. The research reservation or zoological park, containing about eighty acres, is on a peninsula bounded on two sides by the river Molonglo. The report of the Parliamentary Standing Committee on Public Works, dealing with the construction of buildings, has now been published, authorizing for this purpose a sum approximating £100,000. The report has received the unanimous approval of the Federal Parliament, and the buildings, representing what is really the first stage in the establishment of the National University of Australia, will be begun immediately. When the buildings are completed every facility will be offered to workers—not only Australian, but also from other countries—wishing to study comparative anatomy and its application to modern medical and surgical practice. The museum is now at Melbourne, but is to be moved to Canberra next year. To its original contents many important additions have recently been made, including the collection of specimens valued at £25,000 belonging to Dr. George Horne of Melbourne, dealing with the Stone Age men of Australia, and also a collection of aboriginal skulls made by Dr. Arthur Nankivell of Kerang. The museum also possesses the Froggatt entomological collection, and that of Mr. Murray Black dealing with the aborigines of South-East Victoria. The completely fossilized prehistoric Cohuna skull, together with many other specimens of anthropological value, belong to the museum. The Federal Government of Australia is to be congratulated on its decision to establish a centre for the advancement of comparative anatomy, which admittedly is the foundation of all the medical sciences. We may venture to express the hope that the lead now given by Professor Colin Mackenzie will encourage wealthy Australians to display a similar national spirit, and by liberal endowments help on the necessary research work in the interests of humanity.

THE SURGICAL ASPECTS OF ACROMEGALY.

THE Annual Oration of the Medical Society of London was delivered on June 13th before a crowded audience by Professor Harvey Cushing, Hon. F.R.C.S., whose subject was "The surgical aspects of acromegaly." Sir Humphry Rolleston, who presided, introduced Professor Cushing as the leading neurological surgeon of America, one who might well be described as a physician able to use his hands, and whose hands could not only wield the knife, but that more powerful implement the pen; Professor Cushing was the author of a charming biography of a former Orator, Sir William Osler. The text of the Oration, with numerous illustrations, will be published in an early issue. Sir Charles Ballance, before proposing a vote of thanks to the Orator, said with what pleasure the Fellows of the society saw among them that evening Sir David Ferrier, the doyen of neurologists in this country. In Professor Harvey Cushing they had a man who had done more than anyone living for neurological surgery. He remembered Cushing when, a shy, retiring young man, he visited London about 1892, his purpose being to observe the work done at University College, and at the National Hospital in Queen Square. Ten or twelve years later, at the Johns Hopkins Hospital, he found the same shy and retiring man at the head of a most magnificent neurological department, a department which Cushing himself had created. Searching recently in the library of the Royal Society of Medicine, he discovered about 180 published books, papers, and addresses under the name of Professor Cushing. No words

of his could ever sufficiently praise one whom he felt to be a Paladin of surgery. Sir StClair Thomson seconded the vote of thanks, remarking that his own specialty, oto-laryngology, had contributed something to the elucidation of the problem under discussion, and a distinguished laryngologist from abroad who was present, Professor Sugara of Buenos Aires, had performed no fewer than forty operations on the pituitary gland. Sir Humphry Rolleston put the vote of thanks, which was carried by acclamation. Professor Cushing said that he did not deserve the encomiums; he feared that some of the achievements with which he had been credited, including some of those 180 publications, had been wrongly ascribed to him, for there were other Cushings in the States, with whom he was occasionally confused.

THE WATCH ON THE RIVER.

Of sundry advantages which have accrued to this country through the growth of a sanitary conscience there is probably none which has been more conducive to the general health and well-being than the copious provision of wholesome water now available in every great city, and, with few exceptions, in every considerable centre of population throughout the breadth of the land. Whether drawn from recesses of the earth, or distant hills or adjacent rivers, these supplies are conveyed abundantly by various channels into the houses of consumers, who by force of habit have come to regard them very much as a matter of course, or as natural benefits free to all, like sunshine and fresh air. While this disposition to take it for granted may perhaps have some excuse in the case of deep protected wells or waters flowing from untrodden uplands far from the haunts of men, it is quite otherwise with undertakings which abstract their raw water from the polluted rivers that traverse a peopled country. Consumers of supplies like these, which are made and kept wholesome chiefly by means of the untiring vigilance of the officials in charge, may; when forgetful of these their blessings, quickly recapture a proper sense of what they owe to the supervisors of their drinking water by a perusal of such reports as that of Sir Alexander Houston, Director of Water Examination to the Metropolitan Water Board, summarized on page 1122 of this issue. The report conveys to the mind an impression of unrelaxing care enlightened by a comparative study of similar work in other situations. In this report, and throughout the series of his reports from 1906 onwards, including those on research, the director appears to have constantly had before him the quality of the raw waters entering the London works, as contrasted with the same waters after storage but prior to filtration. Up to 1922-23 it had been his practice to make bacteriological examinations of selected samples of the pre-filtration waters; in that year he extended his scrutiny to all pre-filtration waters, holding the view that, if he could establish that the pre-filtration waters, as a class, were safe, the whole fabric of Thames purification would rest on so broad a basis that occasional caprice on the part of individual filters would cease to be of primary importance. The comparison for 1926 as regards *B. coli* between the raw Thames and the stored waters, including the chlorinated waters, shows that, whereas 35 per cent. of samples of the raw Thames water contained *B. coli* in 0.1 c.cm. or less, the usual effect of storage was to improve the water at least a hundredfold. The principle is one which applies not to water purification only, but to most mundane enterprises. The lighter the task of the last line of defence the greater the degree of security. The immunity of London from disease accredited to its water is a vindication of this policy, and a happy result of the watch on the river maintained by Sir Alexander Houston. The public may be reminded that this happy condition of British water supplies has been brought about in consequence of the efforts made during the last quarter of the nineteenth century by the medical profession, who in various ways—by clinical observation, by epidemiological studies, and by bacteriological investigation—succeeded in proving that many diseases, and chief among them epidemics of typhoid fever, were due to contaminated water.

PROPOSED EXTENSIONS OF INSURANCE BENEFIT.

It is understood that either in the autumn session this year, or early next year, the Government will introduce into Parliament a bill proposing some amendments of the National Health Insurance system, including some extension of the scope of medical benefit. The bill is certain to be of a much more modest character than was until lately hoped for. The present attitude of the approved societies makes it impossible to carry out even the most beneficial and least alarming recommendations of the Royal Commission with regard to such extensions. The societies are, it seems, looking forward with some apprehension to the results of their third valuation, and so are refusing to consider any such pooling of surpluses as would be required by the proposals of the Royal Commission. They are naturally cautious in their outlook, and have a laudable desire to command immense reserves. It is, of course, possible, especially in view of the gratifying results of the last two valuations, so largely beyond expectations in each case, that their apprehensions may prove unfounded; but unfavourable industrial conditions are no doubt having an adverse effect, and it may well be that the results of the third valuation a few years hence will be less abundantly satisfactory than those of the other two. It is interesting, therefore, to gather from reports of recent meetings of approved societies—as, for instance, the Whitsuntide conference of the Manchester Unity of Oddfellows at Great Yarmouth—some idea of the nature of the proposals which they intend to allow the Ministry of Health and the Government to make. The establishment of a full consultant and specialist service, or even of a laboratory service, is not to be permitted; but it is suggested that "some of the more essential treatment benefits"—presumably those known as dental benefit and ophthalmic benefit—may pass from the category of "additional benefits" and become part of the statutory "medical benefit," or be placed upon a footing analogous thereto. This would mean that they would be available for all insured persons instead of for some, and that they would be provided and administered by Insurance Committees instead of being under the auspices of the approved societies themselves, or of such organizations as the National Insurance Benefit Society, which are almost indistinguishable therefrom. These would be important alterations in a right direction, but will require the close attention of the profession, and especially of the Insurance Acts Committee and Ophthalmic Committee of the British Medical Association. Further, it is suggested that another anomaly of the approved society system may be modified. Each branch of a friendly society is at present an independent entity for valuation purposes, so that we may find that within a single society in the same town there may be one branch or lodge which provides for its members one kind of additional benefit, a second lodge which provides another kind, and a third lodge which finds itself unable to provide any additional benefit at all. The Manchester Unity, at any rate, has now got so far as to sanction the seeking of power to permit of "the creation within the society of a central fund by the allocation thereto of one-third of the disposable surpluses of all lodges, this fund to be distributed so as to enable lodges to provide such a minimum of certain treatment benefits as may be decided upon." Thus is it possible to contemplate a small but

welcome advance from a state of things which many observers have long regarded as an absurdity. It will be interesting to note the movements of the Ministry of Health within the relatively small field to which the cautious finance and commanding position of the approved societies is confining them.

MENTAL DEFICIENCY ADMINISTRATION.

We publish this week a letter from Dr. Tredgold, in which he discusses the leading article on mental deficiency administration published in our issue of June 4th (p. 1020). There are two chief points raised by Dr. Tredgold requiring, as he thinks, modification of the policy of the British Medical Association, the main principle of which—unification of the administration of health services both centrally and locally—he accepts. These two points are: (1) that instead of there being one chief *administrative* officer there should be two, one the medical officer of health, as now, and one, of independent and equal authority, a medical officer of mental health; (2) that the subordinate medical officer dealing mainly with mental deficiency work should be in personal contact with, and directly responsible to, the statutory committee concerned. Both these suggestions may well be made the subject of debate, but in view of Dr. Tredgold's own statement that "disease of mind should be regarded as part of disease in general," and having regard to the intimate connexion of mental deficiency in children with the other aspects of school medical work, and of mental deficiency in adults with the same condition in children, the former suggestion does not seem to have much validity; and its adoption would be a radical departure from the policy of the Association. In so far as the medical officer of health is not himself expert in the subject of mental deficiency he would, as Dr. Tredgold says, delegate such work to "an assistant possessing the necessary qualifications," exactly as he frequently does in the other special spheres of clinical work. The second suggestion, that such subordinate officer should be in direct relationship with the appropriate committee, is not necessarily in conflict with the Association's policy, though it is contrary to the usual custom of local authorities, who require the attendance at their meetings of their principal officer only. It is quite possible that in some cases where the main part of the work is undertaken by an assistant medical officer, it may be desirable that he should attend with his chief at the meetings of the committee.

THERAPEUTIC SUBSTANCES ACT.

In an article on the Therapeutic Substances Act, 1925, published in the BRITISH MEDICAL JOURNAL of April 16th last (p. 737), we gave an account of the draft Regulations issued by the Joint Committee regarding the manufacture and importation of therapeutic substances scheduled in the Act. The Regulations, as finally revised, will come into operation on August 6th next, except those relating to labelling, which will come into operation on February 6th, 1928. Persons desiring to manufacture or import any scheduled substance after August 6th in Great Britain or Northern Ireland will require a licence. Applications should be made immediately, addressed in the case of England and Wales to the Ministry of Health, Whitehall, S.W.; in the case of Scotland to the Scottish Board of Health, Edinburgh; and in the case of Northern Ireland to the Ministry of Home Affairs, Belfast. The Regulations now issued differ in some respects from the draft published on April 5th, certain modifications having been made to meet representations received. Copies of the Regulations are obtainable from H.M. Stationery Office at Adastral House, Kingsway, London; 120, George Street, Edinburgh; York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; 15, Donegall Square West, Belfast; or through any bookseller. The Minister of Health has intimated to the Association of British Chemical Manufacturers that in the initial period immediately after August 6th some latitude will be observed in the application of the Regulations, so as to allow for the clearance of existing stocks and for those concerned to become familiar with the new requirements.

INTERNATIONAL CONGRESS OF OTO-RHINO-LARYNGOLOGY.

In the days before the war there used to be held at intervals an International Congress of Laryngology. The last pre-war meeting was held in Berlin. Since the war this congress has not been revived, although there was a very successful Congress of Otology in Paris, under the presidency of Professor Sebileau, in 1922. We are now glad to hear that the supporters of both these congresses have combined in launching an International Congress of Oto-Rhino-Laryngology. It will be the first of its kind, and will be held in July, 1928. It should be successful, for many reasons: it will be held on the neutral soil of Denmark; Professor Schmiegelow, the doyen of the specialty in Scandinavia, is the president, and he will be supported by a strong committee, who are all well known workers and very welcome visitors to this country. Finally, Copenhagen at the end of July will be looking its best, and should form a most delightful meeting ground.

OLD MEDICAL BOOKS.

An unusual type of legacy to a voluntary hospital, and one which may possibly set an example for other testators, is that of the late Mr. W. Ward-Cook in bequeathing to St. George's Hospital a small library of choice books, to be sold for the benefit of the charity. The sale takes place on June 22nd at Messrs. Sotheby's; there is no item of great rarity, but it is to be hoped that a fair average price will be obtained for the score or so of lots into which the collection is catalogued. At another sale room—Messrs. Hodgson's in Chancery Lane—a pamphlet entitled "The Last Will of Thomas Guy, Bookseller" (1725), is to be sold on June 17th. This, presumably, is the will by which Guy's Hospital was founded, unless it is a contemporary skit or lampoon based on the curious and well known incident of Guy's revocation of his previous will, by which he had left his valuable estate to his cook. The same sale includes several other medical books and pamphlets. There are a number dealing with the early days both of inoculation and of vaccination for small-pox; these include an "Account of the Effects of Swinging as a Remedy in Consumption" (1787), "Richard Guy on curing Cancer without Cutting" (1764), Rowley's book on "Diseases of the Breasts of Women" (1772), Willis's "Preservative from the Infection of the Plague" (1721), Pitcarne's "Treatise on the Stone" (1739), Fothergill on "Sore Throat" (1748), Pugh's "Midwifery" (1754), and many others.

Sir BERKELEY MOYNIHAN, Bt., President of the Royal College of Surgeons of England, has accepted an invitation to take charge of the work of the Surgical Professorial Unit at St. Bartholomew's Hospital and Medical College from June 15th to June 30th. It will be remembered that on previous occasions Professor Harvey Cushing of Harvard University, U.S.A., and Professor Hugh Cabot of Ann Arbor University, U.S.A., accepted similar invitations at St. Bartholomew's Hospital.

BIRTHS AND DEATHS REGISTRATION ACT, 1926:

WITH SPECIAL REFERENCE TO DEATH CERTIFICATES.

THE Births and Deaths Registration Act, 1926, will come into force on July 1st next. It will be remembered that this Act, for which Dr. F. E. Fremantle, M.P., was largely responsible, deals with the registration of stillbirths, the certification of deaths, and the disposal of bodies. The discussions in Parliament, from the introduction of the bill until it became an Act in December last, have been reported in the JOURNAL in considerable detail, and comments have from time to time been made; but it is essential that the alterations in the law which, in their final form, will now become operative should be fully understood by every registered medical practitioner, not only that he may himself conform to them, but that he may be able to advise his patients how they should act in certain circumstances in which they will naturally look to him for help.

Disposal of Bodies.

With regard to the disposal of the body of a deceased person the Act now prohibits such disposal except on a registrar's certificate or coroner's order; but in order to meet the case where a burial (but not a cremation) is actually in progress and the certificate or order is for some reason (for example, forgetfulness or carelessness) not produced, there is a proviso that the person effecting the burial may nevertheless proceed if satisfied by a written declaration in prescribed form by the person procuring the burial that such certificate or order has in fact been issued. It is further provided that no body may be removed out of England without notice being given to the coroner within whose jurisdiction the body is lying, and the Ministry of Health is empowered to prescribe the period and form of such notice and the procedure upon removal. The Ministry of Health may also make regulations "imposing any conditions and restrictions with respect to means of disposal otherwise than by burial or cremation, as to the period of time a body may be retained after death in an inhabited house or other premises, or with respect to embalming or preservation." It will be advisable for practitioners to familiarize themselves with such regulations when they are issued.

Stillbirths.

With regard to stillbirths, these will now have to be registered in much the same way as though the child had been born alive. The person whose duty it is to give information to the registrar is the person who would have had to give information if the birth had been a live one, and such person is required either to "deliver to the registrar a written certificate that the child was not born alive signed by a registered medical practitioner or certified midwife who was in attendance at the birth or who has examined the body of such child" or to "make a declaration to the effect that no registered medical practitioner or certified midwife was present at the birth or has examined the body, or that his or her certificate cannot be obtained, and that the child was not born alive." The burial of a stillborn child by "a person who has control over or who ordinarily buries bodies in any burial ground" is prohibited "in such burial ground" without a registrar's certificate, or, if there has been an inquest, a coroner's order. A stillborn child is defined as one "which has issued forth from its mother after the twenty-eighth week of pregnancy, and which did not at any time after being completely expelled from its mother breathe or show any other signs of life." It seems clear, therefore, that, though the law with regard to stillbirths has been improved and strengthened, there are still undesirable loopholes of which advantage might possibly be taken. A child whose head or whose head and trunk had been born and who was breathing normally might be caused to cease to breathe before the legs had issued from the vagina, and this would, in law, be a stillbirth. If there has been no doctor or midwife in attendance and the birth is registered there need be nothing more than a declaration by the informant that the child was stillborn. This would enable the body to be buried "in a burial ground"; and there are no provisions with respect to the private disposal of such a body elsewhere. Attention was drawn to the question of the legal definition of live birth by a valuable paper by Dr. Godfrey Carter, read at the Section of Public Health at the Annual Meeting of the British Medical Association at Nottingham last year, and reported in the JOURNAL of August 28th, 1926 (p. 385). The Section passed a resolution on the matter which is still under consideration by the Medico-Political Committee of the Association; that committee may find that the position has been made even more difficult by the definition of stillbirth in the Act of 1926. It should be noted that no official form for a medical certificate of stillbirth is being issued, but every such certificate should include the statement that the practitioner was in attendance at the birth or had examined the body, and should give the names and surnames of the parents (or mother) and the date of the birth.

Death Certificates.

With regard to death certification, the Act makes several important changes in the law, and these, together with the action now taken by the Registrar-General in accordance therewith, will entail certain alterations in methods or practice in this connexion to which medical practitioners have been long accustomed. It is essential that these changes should be appreciated, and that, as from July 1st next, the new requirements should be strictly observed. Since the year 1874, in case of the death of any person who has been attended during his last illness by a registered medical practitioner, such practitioner has been required to give a certificate stating to the best of his knowledge and belief the cause of death. Such certificate must, from the time the new Act comes into force, be given in the prescribed form and in no other. The prescribed form is that contained in the books of forms supplied to practitioners by the Registrar-General through registrars of births and deaths; and no medical certificate of cause of death may be given on this form unless the certifying practitioner has been in attendance upon the deceased during his or her last illness. Changes are made (1) as to the manner in which the certificate, when completed, is to be dealt with; and (2) as to the manner in which the particulars of the cause of death are to be stated.

Hitherto the certifying medical practitioner has been accustomed to hand the certificate to a person liable to act as informant of the death for registration purposes. Henceforth it will be his duty to give to such person only a written notice that he has signed the certificate, and to send the certificate itself direct to the registrar. To facilitate the performance of these duties, (1) the form contains a tear-off portion, bearing the same serial number as that borne by the certificate itself, which must be used by the practitioner in giving the required notice to the relative or other proper person; (2) the registrar will supply the practitioner with official franked envelopes in which the certificates are to be posted to the registrar. These envelopes are not to be used for any other purpose, and no alteration may, in any circumstances, be made in the printing on them. Thus the new form of certificate is in triplicate: (1) a counterfoil for the use of the practitioner, who should in all cases fill it up; (2) the actual certificate of cause of death; (3) the notice to the informant that the certificate has been signed.

The New Certificate: Causes of Death.

The most important alterations in the form of actual certificate are as to the manner in which the particulars of the cause of death are now to be stated. In a very large number of cases only one cause of death needs to be given, but where there are two or more causes these have been placed, in the form of certificate hitherto in general use, under the headings "primary" and "secondary." This has been found to give rise to confusion and to vitiate the mortality statistics, which must necessarily be based upon certificates of death. In the new certificate form this distinction and nomenclature is abandoned, but it is still divided into two sections. In the former section the practitioner is required to enter the immediate cause of death and any morbid conditions which led up to it, these

being stated in order backwards from immediate to remoter causes. In the latter section should be entered "conditions which are not in the chain of pathological events which have led to the immediate cause of death, but which have none the less contributed seriously to the fatal issue." This is a much more clear and logical arrangement than the old; and an appeal is made to the medical profession for co-operation in securing statements in this way which will be reliable, which will be as accurate as possible, and which will thus materially assist the compilation of true mortality statistics, the importance of which for many public purposes is fully recognized. By being careful and accurate in stating the required particulars medical practitioners will, in fact, be contributing to valuable research work in which both they and the public are vitally interested. Members of the profession in general practice have often, through their representatives, expressed their wish to undertake appropriate research work, and it is to be hoped and expected that full advantage will be taken of this new opportunity. The seven examples of the method of using the form given in each book of forms should facilitate a clear understanding of what is required, and the list of indefinite or undesirable terms which are to be avoided will contribute to uniformity of nomenclature and accuracy of statement. Particular attention is directed to the requests that in cases of cancer the seat of primary occurrence should be stated whenever this is known, that whenever pregnancy or parturition has been a contributory cause of death this should be mentioned, that when death is attributable in any degree to anaesthetics the nature of the anaesthetic should be recorded, and that in deaths from violence, whether accidental, suicidal, or homicidal, it is desirable to state not merely the nature of the injury but also the form of violence and the means of violence (for example, "run over by a motor-car").

As part of the certificate the practitioner is required to intimate when he last saw the patient alive, whether or no he viewed the body after death, and whether or no a necropsy was held. On the back of the form are two statements, one or other of which should initialled under appropriate circumstances. One of these statements is to the effect that the certifying practitioner may be in a position later to give more precise additional information as to the cause of death, as a result, for instance, of some laboratory or *post-mortem* examination. In the event of this statement being initialled, the Registrar-General will in due course apply to the practitioner for any further information which he may then be able and willing to give. The other statement is that the certifying practitioner has reported the case to the coroner. It will be observed that the reporting of a case to the coroner does not justify the omission to give a certificate of the cause of death. As the law now stands, and as it will continue to stand, the duty placed upon a registered medical practitioner who was in attendance upon a deceased person in his or her last illness to give a medical certificate of the cause of death to the best of his knowledge and belief, is unaffected by the fact that he or some one else has reported the case to the coroner or that an inquest is to be held. The practice of refraining from giving a death certificate in these circumstances has, however, been not uncommon, and has been based upon the fear that, if a medical certificate were given, the death might forthwith be registered, and the body disposed of before an inquest could take place. The statement on the back of the new form of certificate should obviate any such risk. Where this statement is initialled by the practitioner it will be the duty of the registrar to suspend the registration of the death until he learns from the coroner whether an inquest is or is not to be held.

Viewing the Body.

In the course of the passage of the bill through the House of Commons a strong attempt was made to enforce upon a certifying practitioner the duty of viewing the body after death in every case, or at the very least to secure such inspection in a far larger proportion of deaths than at present. As this was a private member's bill, however, it could not contain any proposal for imposing or increasing any charge upon public funds; and it was further pointed out that the difficulty in this matter was not one merely of expense, but of its impracticability, especially in rural areas, owing to the call upon the doctors' time, and that in a considerable number of cases this *post-mortem* inspection was not really necessary. Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, in a speech which was reported in the JOURNAL of December 4th, 1926 (p. 1084), said that it was proposed to extend the system of reference by registrars to coroners, which at present operates in cases where there is no medical certificate or where the death is due to an accident, an industrial disease, or other cause appropriate for consideration, to certain other cases arising out of facts disclosed by the medical certificate of the cause of death. "The certificate would show whether the doctor had seen the deceased after death, and how long before death he last saw him alive; and it would thus be possible that any case not seen after death or a reasonably short period before death would come under review by the coroner before registration or burial. It was to be anticipated that this arrangement, besides bringing a large class of the more doubtful cases under special review, would greatly increase the proportion of cases seen by a doctor after death, and the improvement in that respect would be progressive." It is understood that registrars have been instructed that when they receive a death certificate in respect of a person who has not been seen by a doctor subsequent to death nor within fourteen days before death they are to refer the facts to a coroner. The Council of the British Medical Association, who were consulted by the Registrar-General in this matter, have raised no objection to the period of fourteen days referred to, but they drew attention to the certification rule under national health insurance which allows an insurance practitioner in certain circumstances to issue monthly certificates of incapacity to insured persons who are suffering from chronic illnesses. In this connexion it is desirable, since the extent to which the bodies of deceased persons are seen after death by a medical practitioner is a matter of some public interest, and since arrangements have been made for the publication of annual statistics with reference thereto, that the medical officer of an institution, in giving a death certificate in respect of an inmate whose body has not been seen after death by him, but has been seen by some other medical officer, should mention this fact. A slight alteration of the words on the prescribed form of certificate will enable this to be done, and such alteration is sanctioned by the Registrar-General.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee thirty-six cases were considered and £690 voted to thirty-four applicants. The following is a summary of some of the cases relieved.

L.R.C.P., aged 82, a widower with one daughter. He had to give up practice on account of age and deafness; his savings, with those of his daughter, were invested in purchasing the house they now live in. Three rooms are let for 25s. a week. He has the old age pension and his daughter receives £20 as an organist. Interest on mortgage £24 per annum; ground rent £7; rates £20. Voted £40 in twelve monthly instalments.

Daughter, aged 79, of M.R.C.S. who died in 1885. She suffers from rheumatism and double cataract. She has two pensions, one of which is the old age pension; these amount to £66 per annum. £5 is received from investments, and £65 from letting. Applicant's sister, who was an annuitant of the Fund, died last month. Voted £20 in twelve monthly instalments.

Widow, aged 65, of F.R.C.S. who died in 1912. At present is ill and asks for expenses to go to a convalescent home. Total income £60 per annum. Voted £5.

Widow, aged 70, of L.R.C.P. who died last month; he was an annuitant of the Fund. Applicant only has the old age pension. Voted £26 in twelve monthly instalments.

Son, aged 16, of M.B.Glas. who died in 1924. Mother is in a mental hospital. The boy is in charge of an uncle, who is not able to keep him entirely. He earns 10s. a week as an engineer's apprentice. Fund repeated the grant of £26 towards his maintenance.

Son, aged 3, of L.R.C.P. who died in 1925. This boy, with his two elder brothers and one sister, are entirely dependent on an uncle, who is unable to meet all the expenses of maintenance and education. Voted £25 towards maintenance.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

THE FAMILY DOCTOR AS SPECIALIST.

ABSTRACT OF THE ALEXANDER BLACK MEMORIAL LECTURE.*

BY

C. E. DOUGLAS, M.D., F.R.C.S.ED.,

AFTER a short tribute to the memory of Miss Ann Black, the foundress of the lectureship, and of her brother, the subject of the address, the lecturer went on to say that he desired to indicate some lines of activity in his own sphere, and not to trench upon the specialized work outside it, in which the family doctor might yet be of great service to the community. It was for the family doctor first to keep alive the great truth of the inherent unity of medicine in all its forms. Secondly, in his work there were positions occupied by him which by their very nature could not be occupied by anyone else, and in which much useful work might be done. Thirdly, the lecturer wished to consider the ethics of the family physician: what in him was the result of the impact on his mind of the vast body of "disharmony" with which from first to last he had to contend.

The Family Doctor in History.

To those with the historic sense the history of medicine conjured up a long vista into the past. Through Babylon and Egypt we came to Greece, the motherland of Medicine; she was truly our spiritual home; it was from her that we drew our earliest nourishment, in common with Art, with Music, with Literature, and Philosophy. We thought of Hippocrates, the Father of Medicine, and still looked to him as our teacher in the higher ethics of the profession. The high ideals of those times were still around us; the Sarastro chain of the high mission to humanity, the Democedes chain of loyalty to co-workers, and the Hippocratic chain of devotion to our suffering clients and to "the Art." The beautiful shadow of Apollo hovered over us still, Harvey himself was full of his debt to Aristotle and the ancients, and it should be noted that all these makers of medicine, from Democedes to Harvey, were men in the general practice of medicine, and the line went on through Jenner, another epoch maker, down to our own Mackenzie. The family doctor was the lineal descendant of these makers of medicine; he stood in the forefront of the battle against disease, and it was his *métier* to represent the inherent unity of his art in the world of medicine, and to act as its general interpreter to his patient.

The Family Doctor as Specialist.

A century ago medicine in this country was in a rather inchoate condition. There was no true corpus of medicine, but the family doctor had become of some importance socially. Instances of the light in which he was regarded were quoted from George Eliot and Oliver Wendell Holmes, and the life and work of Dr. Francis Adam of Banchory—who combined general practice and a profound knowledge of the Greek classics and of nature—was described. About that time there arose Charles Hastings, an Englishman, who went out from Edinburgh University carrying with him its fine atmosphere of culture, of plain living and high thinking, and *camaraderie* between lawyers, doctors, ministers, and all cultivated beings. He conceived the idea of a society of medical men that should make for the "honour and respectability of the profession," and the result of his labours we know to-day as the British Medical Association—the outward and visible sign that doctors were a band of men united in aim and living to some extent in unity with each other. A second factor was the passage of the Medical Act in 1858, in which by the creation of the General Medical Council a certain high standard has been set and maintained. The medical man of half a century ago was probably at as high a point in the society of his day as he had ever been. From this time onward, however, there arose three factors which had tended towards a decline in the usefulness, and therefore of the status, of the family doctor. The first was the rise of the antiseptic system of surgery; this affected him in two ways: by widening the possibilities of surgery so that he could not hope to keep pace with it; and by attracting into surgical practice many of the keener men, who might otherwise now be in general practice. The second factor was the tendency towards collectivism in dealing with matters of public importance, such as the prevention of disease. The other and most deteriorating factor was the National Health Insurance Act. This was said by the lecturer in quite a definite and restricted sense. From the point of view of the community the system was as nearly an unmixed blessing as might be; its influence upon that part of the profession which carried out its provisions was not so good, and was one that might tend towards deterioration. Public moneys were involved; and on the plea that these must be safeguarded the medical profession was saddled with the responsibility of carrying this out by a system of regulation entirely foreign to it, and tending to check any advance in efficiency in its own proper sphere. A cumbersome form of certificate, with regulations to enforce it, was the bugbear on the one hand, and on the other, a "checking bureau," which was on the alert to insist upon economy in prescribing; these two, with the resulting complaints, exactions, fines, and humiliating appearances before Panel Committees, could not fail to have a demoralizing effect upon the panel doctor, who was the family doctor of the working classes, and to degrade him in the eyes of the general public. Materially he is better off, but from any but the financial aspect he is in a miserable plight, tied up by red tape in all directions, and wasting in certification, prescription checking, and recording every trifling scratch and passing ailment, time which should be devoted to the practice of medicine. These three factors had brought it about that the men now in general practice had not the standing of their predecessors of fifty years ago, and the process of deterioration was likely to become more marked as the years went on.

There was, however, a way back to a considerable and respectable place in the medical world: the family doctor was better placed for the observation of certain things than any specialist. To this three objections might be brought: first, the duty of a family doctor was to make use of the results of research, not to carry it out in its scientific aspect; secondly, a family doctor who became particularly interested in any branch of medicine was apt to make it his whole work, and to become a specialist; and lastly, and most important, the limited experience of any one man. In spite of these objections there were directions, untouched by others, in which he might do good work.

First, the study of the beginnings of disease. This was the burden of Sir James Mackenzie's mission; for thirty years he worked to show that in the study of the beginnings of disease there was a virgin field, and that the family doctor was the only one who could work it. In the scientific world Mackenzie was probably remembered as the inventor of the polygraph; but it could not be too strongly insisted upon that his claim to lasting fame rested upon the discovery of an idea, and not of an instrument. This idea was now being carried out at the James Mackenzie Institute at St. Andrews, where the different signs and symptoms of disease were being considered, and the observations tabulated, so that in time a body of evidence might be collated which would throw light upon the beginning of disease; and this work was being done by men in general practice.

Secondly, the practice of what might be called "urgent surgery." The man in country practice, far from the great centres, could save much suffering to the patient, and loss of time in removing an acutely ill case to a distant hospital, if he were able and willing to do such operations as those for strangulated hernia, suture of a ruptured gastric ulcer, appendicectomy, and tracheotomy. The country doctor, then, should specialize in this urgent

* Delivered before the Royal College of Surgeons of Edinburgh, June 15th, 1927.

surgery, not in the sense of special research, but in that of keeping himself fit to deal with urgent cases as they arose.

Thirdly, collective investigation, by men in general practice, of diseases which did not present themselves to the specialist.

Fourthly, a special line—prevention. The family doctor should have opportunity of observing the family in health, on the analogy, now so usual, of taking children to the dentist at regular intervals.

Fifthly, he might exercise the "scientific imagination." This was a contradiction in terms, synonymous with the deductive method. It had already been suggested that the inductive method, involving as it did prolonged research, was practically out of reach for the man in general practice, who seldom saw enough of any one kind of case to form a sound induction. But there was the other method, that of deduction, of synthesis; and it was this habit of speculative thought that had been used by most of the men who in general practice had contributed to the advance of medicine—Harvey, Jenner, Lister, James Mackenzie, men all of the deductive cast of mind. Some examples from recent medicine were the use of salicin in rheumatism, by the late Dr. T. J. Maclaren of Dundee; of thyroid in skin diseases, by Sir Byrom Bramwell; and the speaker's theory of the increased susceptibility of the pregnant woman to disease. Akin to this deductive faculty was that valuable asset to any man in general practice—a sound clinical instinct.

Work such as this was well worth the attention of the members of our body who wished to maintain the standards of their forebears. The times had changed, and we had changed with the times. It was almost a truism to say that new laws tended to produce results never dreamed of by their makers. This applied to the National Health Insurance Acts. No one thought of them as tending to change fundamentally the main activities of the medical profession. And yet they were, in the ways already indicated. The doctor's time was so much taken up with records of trivial events, with writing certificates, writing and re-writing prescription forms (largely, if not entirely, for the convenience of the approved society officials, and for prevention of fraud by chemists), that a very substantial part of his time, which should be given to nothing but the practice of medicine, was wasted, and he was becoming merely an official concerned in administration of funds—work which could be done by lay people, and done quite as well. It was work foreign to him; he was not, as a rule, a good business man, and he often did it carelessly, with the result of "breach of regulations," censure, perhaps fine, and in any case a lowering of his prestige as a member of a profession whose proper work was on a higher plane, and which he probably did as well as anyone. Might it be found possible some day to hark back to the fundamental truth that the doctor's work was the treatment of disease and nothing else?

The Ethics of Medicine.

The family doctor had yet another use to the community; he stood in a very special position in regard to his patients, a position quite separate from the professional one. His work brought him into very close relationship in many a home. In many aspects of life all sorts of things were brought to the doctor for advice, giving him probably as full an idea of the lives of the people, their wants and difficulties, as most. Again, doctors lived in a strange environment of disease and pain and weakness, among "disharmonies" of every physical and psychic kind. Their work was largely with the unfits and misfits of life, seeking to refit them more or less for the work they had to perform. The great mass of healthy folk, who never needed their aid, lay outside their purview.

Thus doctors lived in an artificial world of disharmonies. What was the effect upon their mind? On many it had none. Most men did not dwell on the sad, tragic, or revolting aspects of medical life; but many thought it over and tried to evolve some explanation of this perennial struggle of mankind against its environment of disease and suffering. As usual it was well to go back to Greece to find the first questionings and the noble responses. Just as there were two classes of thinkers always with us—Platonists and Aristotelians, Idealists and Realists—so in this quest we found those who hold that happiness was the prime object of man—the Epicureans; and what might be called the nobler sort, who held that to look for happiness merely was to pursue a chimera which would never be found, or, if found, would only disappear—the Stoics. One or other of these must be chosen, and in these days the Epicurean would gain a clear majority vote. The atmosphere to-day was one of conscious seeking of pleasure, anywhere and everywhere. Was it worth while suggesting that this was a passing phase, recurrent at certain periods of our history? For the spirit of man was built for nobler things. There was that in the Stoic philosophy which found its counterpart among the finer races of mankind at all times and places, the instinct, namely, that the pursuit of self alone brought no real and lasting satisfaction; that something else was wanted—the other than self. There was in man the sure knowledge that suffering was not all to the bad, that to endure was to become strong, that the plaint of Faust, "entbehren sollst Du, sollst entbehren," had some justification if the race was to maintain its high traditions. The great ones of the earth were not reared in the lovely isles of the sea, or the tropical belt, but in the rugged hill countries where Nature was harsh, and brought up her sons inured to cold and hunger and fatigue. Look again at the sick beds one knows, of patients often racked with pain. How patient, how thoughtful of others, how resigned to suffering were these; if the spirit of man were not in them being "made perfect through suffering," then there was no meaning in it. There was in man something more than the quest of happiness. That quest found its fruition easily, and its end was not peace, but mere satiety. The other, the not-self, was it not that for which the medical art existed? Were not its votaries of all grades and branches guided by the same instinct of devotion, of unselfishness, of service? But this was not, and never had been, confined to doctors and their craft. That same instinct of self-control, of inhibition of the lower impulses, showed itself alike in the stoical North American Indian, the Samurai of Japan—Bushido—in the English public school man, in the Presbyterian Scottish forebears, and in the Greek philosophers.

Conclusion and Summary.

The lecturer, summing up his argument, said that the family doctor might be looked upon as the inheritor and curator of the truth that medicine had a corpus of its own, which must not be allowed to become a mere congeries of specialties; that in this territory he had a sphere of activity all his own, in which he might find freedom from the paralysing influence of officialdom. In this scheme of things there was but little room for self, but plenty of scope for service. Width of culture, keenness in work, depth of sympathy with the needs of poor humanity, such were his aims. They were those of Alexander Black, in memory of whom these words were spoken—in memory of a scholar of refinement, who for his living pursued the art and craft of medicine.

Thus one arrived at a vision of the family doctor. He was the heir of all ages, of Hippocrates and before him; with them he inhabited the main road on which the advance of medicine was journeying. It was his to travel on lines where he was nearer to the heart of humanity than any but his ancient ally the minister of religion; like him he sees things and feels experiences known only to them and to the people in whose homes he knows of deeds of quiet heroism, of suffering borne in silence, of self-sacrifice, of many things not published to the world. He saluted with reverence the spirit of humanity, for he knew, because he had seen, that that spirit was stronger than the pains and troubles of this mortal life; that there was nothing, not pain, nor hunger, nor weariness, nor the haunting dread of death and the invisible, that the spirit of man would not surmount and find itself the conqueror, not once and now, but always, and to the end.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

ANNUAL GENERAL MEETING.

THE annual general meeting of the London and Counties Medical Protection Society was held at Victory House, Leicester Square, London, on June 8th, with Sir JOHN ROSE BRADFORD, president of the society, in the chair.

In submitting the annual report Sir John Rose Bradford said that the work of the society had increased, not only in respect to the actual number of cases coming forward for advice and assistance, but in respect also to the gravity of many of them, especially during the last year. Some of the cases involved very serious possible consequences to the members concerned, and he did not think he was exaggerating when he said that these cases, however anxious they might have been, had been dealt with by the society very successfully and in a manner entirely satisfactory to the members. In some now celebrated cases he believed that the society would be looked upon in time to come as having played a very noteworthy part, not only in the interests of the individual practitioner who happened to be implicated, but in those of the profession as a whole. He doubted whether the profession at present realized the debt which it owed to the society in that respect, for what the society had done could only have been done by a body which had on the one hand available the skill of competent legal advisers, and on the other the necessary financial stability, thanks to the care of treasurers past and present in husbanding the financial resources. The membership of the society had considerably increased, and now stood at about 10,000. This was a considerable figure, but even when the membership of the sister society was added it was evident that a very large proportion of members of the profession had neglected to avail themselves of the protection afforded at so small a cost. He also emphasized the necessity that a member, involved in anything which was likely to lead to litigation, should lay the case before the society at the earliest possible moment, instead of taking action on his own account.

The report was unanimously adopted, and with many expressions of appreciation for their past services the retiring officers and members of council were all re-elected, the officers being Sir John Rose Bradford (President), seventeen Vice-Presidents, Dr. C. M. Fegen (Treasurer), Dr. Hugh Woods (General Secretary), Mr. A. G. R. Foulerton (Financial Secretary), and the solicitors and auditors.

An extraordinary general meeting followed for the purpose of making some alterations in the articles, the principal of which was the insertion of a new article: "Additional benefits or special indemnity may be offered to members on such terms and in return for such extra payment or subscription as the council may from time to time prescribe." Sir JOHN ROSE BRADFORD explained that this alteration was necessary owing to certain additional benefits which the society, together with the Medical Defence Union, were proposing to give to their members. It had reference more especially to the principal's responsibility for the acts of an assistant who was not a member of a defence society. By paying an increased subscription of 10s. for each such assistant the principal was enabled to secure this protection. It was not quite clear under the existing articles of association whether the council had power to do this, and, therefore, it was proposed that this change should be made to put the permissibility of these additional benefits beyond question. The alteration was agreed to.

The annual report of the council stated that 1,057 new members had been elected during the year, including 355 who, joining the society within one year of registering, were exempt from the entrance fee. The number of applications for advice and assistance from members was 961, as compared with 801 for 1925 and 785 for 1924. In a large majority of the cases satisfactory results were obtained without litigation, and the results of most of the cases in which litigation occurred were also satisfactory. The council had continued to make provision, by special insurance, for an unlimited amount, to defray damages awarded against members, together with the costs allowed to the other side, in actions which the society undertook for members which were not successful. No claim had yet been made upon the society's insurers, but it was considered necessary to be safeguarded against all possible contingencies. The financial statement showed a reserve fund standing at £9,549, an insurance fund standing at £29,720, and a general fund at £1,333.

A very interesting solicitors' report and an abstract of cases dealt with by the society during the year were appended. The solicitors (Messrs. Le Brasseur and Oakley) stated that the past year was marked by the first defence in respect of a capital criminal charge which the society, since its commencement, had been called on to undertake. The gravity of this case, when first before the society, was immediately appreciated, and prompt steps were taken for the protection of one of the two doctors concerned. The other at that stage, not realizing the gravity of his position, had not then applied to the society. On the face of the depositions the case appeared to present difficulties, but after very careful investigation and consideration the society was satisfied as to the innocence of both its members. The solicitors were given an open hand to seek such expert advice as they required; through this, and the individual consideration by members of the council, the acquittal of both members was secured.

England and Wales.

LONDON WATER IN 1926.

SIR ALEXANDER HOUSTON has issued his twenty-first annual report on London water; it deals with the twelve months ended December 31st, 1926. He begins with an account of Kent and its wells, which rivals in charm the description of the New River contained in his twentieth report. Kent's contribution to the water supply of London amounts to one-tenth of the whole. It is drawn from twenty-four deep wells, which yield a daily average of 27 million gallons, enough for a town of the size of Manchester. The water is clear, of exceptional purity, and cool in the hottest weather. During 1926 the average bacterial counts from the wells were 9 per c.cm. on gelatin and 0.05 on agar, with *B. coli* absent from 100 c.cm. in 94 per cent. of samples. The chemical analyses were not less commendable. The average figure for ammoniacal nitrogen was 0.0002 parts per 100,000, for albuminoid nitrogen 0.0023, and for oxidized nitrogen 0.6. Hardness, on the other hand, as might be expected, was high, but was mainly temporary. The water of the Deptford Garden Well had come under notice last year as harbouring a pathogenic leptospira. No obvious explanation for this unprecedented occurrence presented itself. The well, as a precaution, was chlorinated for a time, but, as the untreated water remained free of virulent leptospirae, chlorination has been discontinued. This section of the report is illustrated by a photograph of the well. The report includes, in addition, many other photographs of well-houses, river reaches, and features of interest, which amply justify, if justification were necessary, Sir Alexander's cordial feeling for "Kent, the garden of England." The chlorination of Thames water was begun in 1916, and about two million people have, with some intermissions, been supplied with 76 million gallons of chlorinated water daily; no complaint of a taste has been made. During 1926 the bacterial record for Staines and Hampton together showed *B. coli* absent from 100 c.cm. of chlorinated water in 53 per cent. of samples. Chlorination, which was begun as a war-time emergency measure to save the coal which would otherwise have been consumed in the continuous pumping of Thames water through the Staines reservoirs, remained in operation afterwards on its merits. Some 25,000 million gallons were chlorinated in 1926, at an average dose of 0.35 parts of chlorine per million and a cost for chemicals of one shilling per million gallons. The net saving on coal was £14,872. The bacteriological state of prefiltration waters was carefully noted, as in previous years, and the improvement in quality of raw waters after storage was consistently observed.

The Barn Elms experiments continue. Work has been carried on with a view to determining, in the case of stored water, the results of rapid filtration without coagulants at a rate of over 134 gallons per square foot per hour, followed by slow sand filtration through filter-bed No. 18 at three times the normal speed. The results were judged by the quality of the final filtrate, the output between

cleanings of filter-bed No. 18, and any progressive reduction in this figure. The first of these criteria has reference to health; the second and third are economic. It was found that in the final filtrate *B. coli* was absent from 100 c.cm. of water in 81 per cent. of the samples tested; the standard was as high as by ordinary slow sand filtration at one-third the speed. The average output of filter-bed No. 18 per acre cleaned was 207 million gallons, more than twice the amount by ordinary slow sand filtration. The quantity fluctuated to some extent during the period of observation, but there was no progressive tendency to choking. These are distinctive findings. The Walton works, opened by Mr. Neville Chamberlain in July, 1926, are apparently being run on lines suggested by the Barn Elms experiments.

An investigation was made of 1,000 lactose-negative colonies showing colourless on rebipelagar in course of routine examinations of water, with a view to determining their possible kinship with pathogenic strains. Of the 1,000 colonies picked off, 135 turned out to be lactose fermenters and none of the remaining 865 gave the reactions of the typhoid, Salmonella, or dysentery groups.

Among topics of general interest commented upon in the report, which is the first of the series to be based on the calendar year, are the iodization of water supplies in order to control goitre, the Poplar outbreak of water-borne gastro-enteritis (JOURNAL, May 14th, p. 889), and super-chlorination followed by dechlorination as applied at Toronto to Lake Ontario water.

RADIOLOGICAL DEPARTMENT AT NEWTON ABBOT HOSPITAL.

The Prince of Wales visited Newton Abbot on June 7th to open two new wings which have been added to the hospital, at a cost of £16,000, for the more effective treatment of cancer. Dr. Edgar Haydon, senior medical officer, presented an address, in which he mentioned that this hospital was the second in England to be endowed with a stock of radium for the treatment of malignant disease. In consequence of this the number of patients received had been increasing each year, and the present enlargement had become urgently necessary. Mr. Sampson Handley attended a banquet at Newton Abbot in the evening in commemoration of the occasion, and commented on the great need for the provision of such treatment for cancer. Dr. Haydon stated that towards the cost of the extension £14,000 had already been raised, and it was hoped that the remainder of the sum might be obtained during the next six months.

DEWSBURY SANATORIUM.

The new Dewsbury Sanatorium, at Whitley Grange, which was opened on May 24th, is built in the pavilion style and provides accommodation for thirty beds, wings for the two sexes being separated by a central administration block. Five double-bed and five single-bed wards are provided for each sex. An open verandah, facing south-east, runs the whole length of the wards, and is covered by a glass roof. Asphalt paths have been constructed round the outside of the wards, and a roadway gives access to the land behind the sanatorium; the nurses' home has been extended. The cost of the new buildings was £7,610. The old wooden wards, previously used for treatment, will now serve as recreation rooms.

Scotland.

CARE OF THE BLIND IN SCOTLAND.

THE annual conference of the Scottish National Federation of Institutions for the Blind opened at Inverness on June 9th. Delegates were present from all parts of Scotland, representing institutions where the education and training of the blind are conducted. Dr. George Mackay, Edinburgh, in a paper on the welfare of the blind from an ophthalmic surgeon's point of view, spoke of the importance of securing the normal development of an organ which must be ready to function from the moment of birth. The early acquisition of clear fixation and of directional experience was required as a stimulus for visual development, and to prevent uncontrollable nystagmus throughout life. Congenital malformations were, he said, responsible for a certain proportion of blind children, but as similar defects occurred in the lower animals, these could not be assigned to blameworthy parental actions. The danger to the eyes at birth from injury or purulent infection was mentioned; though ophthalmia neonatorum was decreasing, constant vigilance must still be maintained. Many eyes were hopelessly scarred in childhood by recurrent attacks of phlyctenular keratitis in weakly children, who suffered also from decayed teeth, septic tonsils, adenoids, and a general want of resistance to the tubercle bacillus. Proper feeding, sufficient air, and sunlight were necessary to prevent the occurrence of such conditions. The proportion of admissions to blind asylums resulting from inherited syphilis was relatively large; the facilities which were now offered for treatment by public authorities could not fail, however, to lessen the incidence of this disease, and were undoubtedly diminishing the severity of its manifestations. Among the other causes which contributed to the ranks of the blind were glaucoma, optic atrophy, detachment of the retina, atrophy of the choroid with or without high myopia, degenerative changes affecting the retinal pigment cells, and haemorrhages into the eye or brain associated with high blood pressure. Blindness from accidents varied in frequency in different parts of the country according to the main industries followed. Leprosy and small-pox as causes of blindness had practically disappeared in this country, and trachoma or granular conjunctivitis was rare save among alien immigrants, notably Irishmen, Poles, Germans, and Russian Jews. Dr. A. Freeland Fergus, Glasgow, in commenting upon Dr. Mackay's paper, said that an arrangement ought to be made whereby every blind person in the country could have the benefit of the advice of a reliable ophthalmic surgeon. A discussion on the mentally defective and inefficient blind was opened by Mr. George Danby of the Royal Glasgow Asylum for the Blind, who said that the problem urgently called for attention; while it was agreed that marriage of the physically and mentally fit blind person was to be encouraged, the union of a person mentally defective as well as blind was to be deplored. He gave a general idea of the work and training that could be accomplished in a home provided for blind mental defectives. The report of the directors of the Royal Blind Asylum and School, Edinburgh, for the year to March 31st, stated that though the workshops of the institution had passed through a year of great trade depression the directors were able to give a satisfactory report on new agencies established by them in the south of Scotland, which had brought a considerable increase of new business to the institution, through the establishment of motor transport. The number of blind persons undergoing technical training had increased to seventy-nine. At the sixty-seventh annual meeting of the Mission to the Outdoor Blind for Glasgow, the Lord Provost, who presided, said that it took a very high place among the practical and benevolent work of the city. At the annual meeting of the Dundee Mission it was reported that the number of blind on the register was 365—116 males and 249 females—an increase of 11 on the previous year. Mr. S. G. Fraser, convener of the public health committee, moving the adoption of the report, said that for the last three years in Dundee there had been only one case of a child in whom ophthalmia neonatorum had caused loss of eyesight.

VITAL STATISTICS OF THE FIRST QUARTER.

The report of the Registrar-General for Scotland on the births, deaths, and marriages registered during the quarter ended March 31st, 1927, shows that the more outstanding features of the vital statistics during the period were a birth rate of 20.5 per 1,000, a marriage rate of 6.1, and a death rate of 16.1. The birth rate is 2.4 less than the average, the marriage rate 0.3 less than the average, but the death rate, though higher than in the previous quarter or in the first quarter of last year, is 0.8 below the mean of the first quarters of the preceding five years. The infantile mortality rate of the quarter was 110 per 1,000 births, which is 5 less than the mean for the first quarters of the previous five years. The deaths from malignant disease were 1,671, equal to a death rate of 138 per 100,000, being 17 more than in the previous quarter and 45 more than in the first quarter of last year. The death rates

from all forms of tuberculosis and from tuberculosis of the respiratory system were 109 and 77 per 100,000 respectively, both lower than in the first quarter of last year. Deaths from influenza numbered 1,274, and equalled a death rate of 106 per 100,000. This number is 1,062 more than in the previous quarter, and 945 more than in the first quarter of last year. It goes far to explain the slight increase in the general death rate for the quarter. For the principal towns the highest influenza death rates were in Kilmarnock, Dunfermline, and Perth, and the lowest in Clydebank, Ayr, and Glasgow. The rates in Edinburgh, Dundee, and Aberdeen occupied a middle position. No deaths from small-pox are recorded, but 3 died of enteric fever, 152 of diphtheria, 25 of encephalitis lethargica, and 30 of cerebro-spinal meningitis. Deaths from diseases and accidents of pregnancy and childbirth numbered 151, which is 33 less than in the first quarter of last year.

American Doctors' Visit to Edinburgh.

The Inter-State Post-Graduate Assembly of North America paid a visit to the Edinburgh Medical School on June 6th and 7th. The party numbered 120. At the Royal Infirmary a demonstration of radiological appliances and work was given in the *x*-ray department, clinics were held in various wards, and operations performed in the surgical theatres. A small party of the visitors also attended clinics in the Royal Hospital for Sick Children. In the afternoon a lecture was delivered by Professor Sir E. Sharpey-Schafer on the relationship of physiology to medicine and surgery. This was followed by a lecture on the history of medicine and surgery in Edinburgh, by Dr. J. D. Comrie. Later the visitors were present at the Cameron Prize Lecture, by Dr. H. H. Dale, entitled "The nature of the action of insulin," and a party was conducted round the Museum of the Royal College of Surgeons by Mr. D. M. Greig, the conservator. On the afternoon of June 7th the party left for Newcastle to embark for Bergen for a tour of the medical schools on the Continent.

India.

Indian Science Congress, 1928.

The fifteenth annual Indian Science Congress will be held in Calcutta from January 2nd to 7th, 1928. In view of the meeting in this city in the previous month of the seventh Congress of the Far Eastern Association of Tropical Medicine, to which we referred on May 21st (p. 944), some doubt has arisen as to the advisability of proceeding with the arrangements for the medical section of the Indian Science Congress, since a certain degree of overlapping would appear to be inevitable. In the circumstances an attempt is being made to find out from medical practitioners in India whether meetings of the medical section of the Indian Science Congress should be abandoned on this occasion, or whether enough support will be forthcoming to ensure successful meetings being held. It is fully recognized that the first duty of the medical profession in India is to the Congress of the Far Eastern Association, and that an obligation is laid on India to uphold her status in the sphere of tropical medicine which is not bounded by limitations of nationality. It is possible, however, that sufficient promises of support and offers of medical and scientific papers will be received to justify arrangements being made to hold meetings of the medical section of the Indian Science Congress.

Filariasis in India.

At the Indian Science Congress held at Lahore last January, Lieut.-Colonel Sir Frank Connor, I.M.S., professor of surgery at Calcutta Medical College, pleaded for a thorough investigation of the filariasis problem, with special reference to the condition in India. At present no organized attempt is apparently being made to deal with a disease which is causing great suffering to many of the inhabitants of India, China, parts of Southern Europe, the Pacific Islands, Australia, and the West Indies. Sir Frank Connor, whose address to the congress is published in the May issue of the *Indian Medical Gazette*, draws attention to the serious gaps in our knowledge of this infection. Little information exists about the stages which follow the entry into the human host of the microfilariae from the mosquito, and about the way in which the adult worms destroy and obstruct the lymphatic vessels. Other investigations which are urgently necessary include the study of the nature of filarial fever, the details of the varying types of lymphatic obstruction, and the etiology of tropical hydroceles. Sir Frank Connor considers that a mosquito survey is essential, with special reference to the varying incidence of filariasis. He advocates the appointment of a special commission to correlate existing sporadic researches and to solve the problems of prevention and treatment.

Medical Aid for Women in India.

Three annual reports for 1926 of organizations of which Lady Irwin is president have been issued in one volume. These organizations are the National Association for Supplying Medical aid by Women to the Women of India, which incorporates the Countess of Dufferin's Fund and the Women's Medical Service; the Victoria Memorial Scholarships Fund; and the Lady Chelmsford All-India League for Maternity and Child Welfare. The National Association, founded in 1885, devotes its funds chiefly to the medical training of Indian women; it also gives grants to hospitals for women in various parts of India. In its forty-second annual report it is stated that there are 256 women medical students at present, of whom 105 are attached to the Lady Hardinge Medical College at Delhi. At the hospital in connexion with this college Lady Reading opened, in March, 1926, a new unit of sixty beds, including accommodation for sick students and nurses, an *x*-ray department, and five single rooms for paying patients. The number of in-patients in 1926 was 3,867, as compared with 3,012 in the previous year, and the out-patient department dealt with 11,670 cases. The electro-therapeutic department was extended during the year under review by the addition of apparatus for high frequency and diathermy work. The Dufferin Fund has assisted in the erection of a new home for nurses at the Victoria Zenana Hospital at Delhi; this will enable further accommodation to be provided for paying patients. The Dufferin hospitals in Shikarpur, Hyderabad (Sind), Karachi, Calcutta, and elsewhere have increased their activities. The building of the new hospital at Nagpur is proceeding satisfactorily, and the opening of the new maternity blocks in connexion with the hospital at Cawnpore has resulted in a notable increase in the number of in-patients and maternity cases. A new operating theatre was opened at the Lady Elgin Zenana Hospital at Gaya, in July, 1926. The Lady Chelmsford League has given considerable assistance to the health schools at Delhi, Lahore, Madras, and Calcutta. The Delhi health school, now known as the Lady Reading Health School, has obtained new quarters, comprising several rooms for ante-natal work, consultations, the treatment of minor ailments, an observation ward, a classroom, and two bathrooms. The building is situated in a congested area, and the health visitors under training at the school have ample facility for the study of home conditions. Two new subjects have been added to the curriculum—namely, vaccination and child psychology. The demand on the Lady Chelmsford League for trained health workers is far in excess of the present supply, and with a view to obtaining more students it is proposed to increase the number of scholarships for the preliminary midwifery course. The Lahore health school, previously controlled by the Lady Chelmsford League, is now being taken over by the Punjab Government. Additional schools for the training of health visitors are in existence at Poona and Nagpur; in both cases special emphasis is laid on practical work. The Lady Chelmsford League assists a large number of maternity and child welfare centres, including those at Simla, Dera Ismail Khan, Rajputana, Bangalore, and Madras. The travelling exhibition of the League visited numerous large towns during last year, and various pamphlets on health subjects were printed and distributed. A new cinematograph film illustrating child welfare work in Delhi has proved very popular.

Correspondence.

DRUGS FOR SLEEPLESSNESS.

SIR,—While feeling that Sir Maurice Craig's statement that sleeplessness is one of the commonest causes of mental illness is very debatable, and believing that insomnia is nearly always a symptom and seldom if ever a primary cause of serious mental disorder, I am chiefly concerned to deal with the views of Sir William Willcox, who implies that the barbitone hypnotics are to be classed as dangerous drugs. It is true that if sleeplessness be regarded as a symptom rather than a cause of mental illness the barbitone group can no longer be looked upon as sovereign prophylactics; but there remain definite indications for their use, which it would be a pity to hamper unnecessarily. Yet if the arguments of Sir William Willcox are accepted, their effect will be to limit the usefulness of these hypnotics seriously indeed. He bases his statements on clinical and on experimental grounds. Evidently as a toxicologist he becomes a victim of errors of sampling, and sees principally those patients who have abused the hypnotics prescribed for them. On the basis of considerable experience of medinal (now the most widely used of the barbitone hypnotics) in my own hands and in those of colleagues, I have no hesitation in saying that where a proper discretion is exercised in the choice of patient, serious toxic symptoms with the usual medicinal doses (5 to 10 grains), even when long continued, are rare; that they are attributable to other factors such as idiosyncrasy; and that they are rapidly recovered from. Medinal is not in the majority of cases a cumulative poison in ordinary doses to the human adult.

The experimental evidence quoted by Sir William Willcox is founded largely upon an article by the late Sir F. W. Mott and Drs. Woodhouse and Pickworth in the *British Journal of Experimental Pathology*. The experimental results, while admirable in themselves, will not for a moment stand the application which Sir William Willcox seeks to give them. The objections are as follow. (Cats and monkeys were used for the experiments.)

(1) Cats at least were unsuitable subjects. The most careful observation failed to detect any trace of sleep in them after doses, however large.

(2) The doses used were disproportionate to those given in man. The weight of the cats ranged from 600 to 2,000 grams. Five- or ten-grain doses were given daily. Taking the average human adult as weighing 70 kg., the equivalent dose in man would be from 600 to 1,200 grains—enough to kill ten or twenty men. And the equivalent of these doses was given in a single day. Some of the animals received in the course of treatment as much as 600 grains, which is the proportionate equivalent of 70,000 grains in man. No one denies that medinal in excessive doses is dangerous or even lethal.

(3) The animals were seldom allowed to recover from these enormous doses, but were usually killed at once; although it was noted that in animals allowed to recover even "after an advanced stage of drug treatment" the activity and intelligence returned to normal in ten to fourteen days. If the animals were then killed, little or no histological change could be detected in the central nervous system (and this in a cat treated for forty-eight days with doses of 2½ to 5 grains a day—the human equivalent of 87 to 175 grains a day, making in 7 weeks a total of 4,200 to 8,400 grains).

It is clear that such experiments have little clinical application, except to show that the members of the barbitone group are remarkably harmless to the central nervous system. The clinician must decide what latitude to allow a patient in the matter of hypnotics. In any case the drug should be regarded only as a symptomatic remedy, to be used while an attempt is made to discover the underlying causes. If there is any doubt in a given patient, the suggestion of a German physician, that a small dose of pulv. ipecac. be combined with each prescribed dose of medinal, would ensure that with a lethal dose of medinal would go also an emetic dose of ipecacuanha.—I am, etc.,

London, W.1, June 9th. R. D. GILLESPIE.

SIR,—The causes of sleeplessness are so varied, the physique and the mentality of the sufferers so different, that there is probably justification for the divergent opinions expressed by those who advocate and those who oppose the prolonged use of drugs. The type of case met with by Sir Maurice Craig is not that seen frequently by the average medical man.

I have met with only one patient who seemed none the worse for having taken some form of sleeping draught three or four nights a week for twenty years. She was a robustly built lady over 60, who never had to use her brain for any purpose. The cause of her sleeplessness, when I saw her, was intestinal flatulence; with treatment for this condition she reduced the drug-taking to twice a week. She could not break the habit; nor did she wish to do so. Perhaps she was right in her opinion that drugs were harmless when she had no worries and did not need to use her brain.

It would be disastrous were drugs regarded as safe for the average case of insomnia in brain workers. We require first-hand evidence from the normal person engaged in business or the practice of a profession. Attacks of sleeplessness may arise from such causes as overwork, worry, financial or emotional overstrain, or from an easily overlooked source of chronic toxaemia. The incessant noise of street traffic aggravates the condition, and the insomnia becomes habitual. What is the effect of drugs in those cases? If taken for a few nights the sleepless habit may be broken, the sufferer is refreshed and all is well. But is this the usual course of events? As a general rule the victim finds that the continuance of the drug is necessary; he is afraid to go to bed, dreading the hours of waiting for the sleep which will not come. The sleep obtained at length by drugs does not restore his fatigue; his mind is confused when prompt and accurate thought is demanded; his intellectual output is diminished and deteriorated; his relations with the external world and its values become altered; he becomes stupefied and profoundly depressed, hypersensitive, and hyperemotional. At this stage a long holiday is the sole remedy which will save the sufferer from a complete breakdown.

There is, however, a method by which sleeplessness may be effectually aided, and the habit broken if the patient is seen before drugs have been taken for long. I speak from limited experience of such patients, but also from personal experience of many occasions when work had to be done which demanded accuracy of thought during the day's routine. Weary of the stupefying effect of drugs, I remembered how Leduc had recommended for neurasthenia the passage of a galvanic current through the brain. The result of following his directions was so happy that ever since I have resorted to his method, both for myself and my patients, with a confidence never betrayed. The current must be given by those accustomed to deal with electricity, as it is important to avoid shock. The electrodes must be properly padded; the negative pole placed over the forehead; the current turned on and off very slowly. Leduc used to give 20 m.a.; I find 5 to 10 m.a. for fifteen to twenty minutes is sufficient; many people cannot stand more. The immediate effect is a lightening of the feeling of tension and stupefaction, a speeding up of thought processes. When night comes the brain is no longer too tired to sleep; sleep comes naturally and is refreshing. Often one treatment is all that is needed to break a bout of insomnia which threatens to become serious.—I am, etc.,

London, W.1, June 7th. AGNES SAVILL.

SIR,—There is no question that in certain forms of mental disease it is necessary to use drugs to procure sleep and relief from mental pain, and that in acute illness the occasional use of veronal and medinal is justified. But I must support Sir William Willcox when he condemns the use of barbituric compounds, unless the patient is under continual medical supervision.

Addiction to veronal undoubtedly exists. I know of two cases. One, a man of 40, perfectly normal until he was given medinal for eight weeks on end, during and after an attack of influenza. Since then he has tried to give it up, but is unable to do so. Without it, to use his own words, he is "incapable of mental concentration and so irritable that work becomes impossible." The other case is a woman of 35, apparently suffering from some form of auto-intoxication, of which insomnia is one of the manifestations. This is a case where physiotherapy should have been tried before hypnotics were resorted to—the kind of

case in which colon douching, diathermy, ultra-violet light, combined with tepid (Priesnitz) abdominal compresses and judicious massage, often give very good results. Unfortunately medinal only was prescribed, and the patient has taken it for five years, first in 5, then in 7, now in 10-grain doses. There is distinct evidence of mental deterioration, which her husband and family ascribe to the drug. He has begged her to give it up; but to stop it, he says, makes her unutterably miserable, and so depressed that he has given up all opposition. "Besides, what can I do when she is assured that it is harmless?"—I am, etc.,

JUSTINA WILSON, M.R.C.P.Edin.

London, W.1, June 6th.

SIR,—Many patients who have been referred to me by their doctors for nasal obstruction have suffered for long periods from sleeplessness, and I have elicited the fact that often for years they have been taking such a drug as medinal in order to obtain anything like a good night. I have never heard of any ill effects, but only of how beneficial and indispensable this drug has been.

It is not sufficiently recognized how commonly nasal obstruction is present in varying degree, and always aggravated on lying down, in those complaining of want of sleep; this is easily explained, since any interference with clear nasal breathing leads to brain congestion, which is inimical to repose. The sure cure of many a be-drugged sufferer is by way of a nasal operation, such as septal resection, or submucous turbinectomy skilfully performed.

I have notes of numerous patients who have taken dial and medinal in small and moderate doses over long periods, originally prescribed by physicians or doctors for erratic sleep, but in none has there ever been established any marked addiction or habit.—I am, etc.

London, W.1, June 7th. WM. STUART-LOW, F.R.C.S.

SIR,—Sir William Willcox's warning about the dangers of the barbital group of sedatives is timely, for I find in the minds of many practitioners, besides myself, an uneasy feeling that the claims made as to their harmlessness are extravagant. The two following distressing cases have occurred recently within my own experience.

A man, aged about 50, had been taking one or other of these drugs at irregular intervals for a year or two, and probably more of late. He began with what appeared to be influenza, followed in a fortnight by pneumonia beginning in the right middle lobe. This cleared up, but for the greater part of a month he was practically unconscious, and had incontinence of both urine and faeces. His condition was at that time diagnosed by "competent authority" as encephalitis lethargica. He eventually recovered, and for the last month has shown no mental or moral deterioration, but only physical weakness, which is rapidly improving.

The second case was a man, aged about 70 years, who had had another preparation of the same group with fair frequency for four months. He has now been frightened into refusing it, because twice he has awakened in the night after it to find himself with the urinal in bed and the bedding all soaked.

Whether this is due to a half-unconsciousness (it had always acted well previously) or to poisoning of the centres I cannot say, but it has been distressing and alarming enough to cause distrust of these much vaunted preparations.—I am, etc.,

Leigh, Lancs, June 6th. JOSEPH JONES, M.D.

SIR,—The following case of addiction to drugs of the barbituric acid group is of interest.

An unmarried woman, aged 40 (British), who suffered from chronic infection of both antra, following operations on the nasal septum for the relief of asthma. She was otherwise physically strong, and was mentally normal. She was holding a position of responsibility and trust up to a few weeks of her death. The toxaemia from focal infection caused restlessness and insomnia, and for four years veronal (diethyl barbituric acid) was prescribed, in various countries, for the relief of insomnia. Twelve months before her death the following symptoms, in this order, appeared: (1) increasing restlessness and insomnia; (2) mental worry; (3) thick, indistinct, slurred speech; (4) urticarial eruption, with itching of the skin, especially of the legs; (5) headaches, and many other subjective symptoms—for example, that her "head was made of cotton-wool," and was "buzzing round inside"; (6) vertigo, with the feeling that stationary objects were moving round her; (7) nausea; (8) irritability and depression; (9) diplopia and indistinct vision, following larger doses; (10) ataxic gait, with dragging of the feet and difficulty in walking upstairs; at times reeling and staggering gait, so that the patient walked with the aid of two sticks; (11) conjunctivitis and inflammation of the eyelids, which have been frequently recorded in veronalism. The patient experienced a sense of well-being and temporary relief from restlessness after taking the drug, and found she could not give it up.

In April, 1925, she entered a nursing home in London and was prescribed 10 grains of medinal (sodium veronal) and 10 grains of aspirin at night, for the relief of headache, pain in the left eye, and insomnia. After the dose had been given the patient took a dose of somnifène (isopropyl propenylbarbiturate of diethylamine), which had been prescribed abroad, in place of veronal, several weeks previously (20 to 30 minims somnifène=5 grains of veronal).

Next morning she was found to be comatose, with the breathing stertorous and of Cheyne-Stokes type. Raised temperature, feeble pulse, and cyanosis occurred, the symptoms leading to the suspicion of a cerebral lesion. Before the onset of the acute symptoms the condition had been treated as post-influenzal functional neurosis.

Pus from both antra discharged down the nostrils shortly before death, which occurred about twenty-six hours after medinal had been given. The time at which the patient took somnifène is not known.

Post-mortem examination showed no organic lesion, but signs of pneumonia. The amount of veronal found on analysis in the various organs was: liver 2.5 grains, urine 7.8 grains, stomach and contents 0.8 grain, kidneys 1 grain—total 12.1 grains.

The estimated total dose taken was 50 to 100 grains of veronal. The verdict at the inquest was "Death from an overdose of veronal." This was clearly a case of chronic veronal poisoning following addiction, and terminating in a fatal overdose.—I am, etc.,

London, W.1, June 4th. H. YOUNG.

SIR,—Sir William Willcox takes exception to my criticizing his paper before it is published in full, but he does not say that the report which was published in the BRITISH MEDICAL JOURNAL of May 14th (p. 877) was in any way incorrect. He was reported as having made very definite statements regarding the barbitone group, and it was these statements which seemed to me to call for comment, as I felt that the great therapeutic value of these drugs was being jeopardized by the emphasis that Sir William Willcox laid upon what he regarded as the danger attached to their use.

The argument from the use of these drugs for self-destruction does not seem a very strong one, as, even if the numbers were far greater than those given by Sir William Willcox, there is nothing to show that these persons would not have destroyed themselves by some other means, as indeed they almost certainly would; while to say that, if a patient who has been taking medinal regularly on medical advice takes his life, this is the result of the medinal and not an act resulting from the condition for which the drug was given seems to me quite indefensible. Sir William Willcox states that, a patient having taken 10 grains of veronal every night on medical prescription, "*this caused*" (the italics are mine) "mental depression, leading her to take 10 ounces of pure lysol with fatal result." I presume that the patient in question was taking the veronal for sleeplessness, which is a common cause of depression, therefore why conclude that the veronal was the active factor in bringing about the depression? Again, he records another case of a patient who had been taking a daily dose of 5 grains of medinal over a long period. "*This culminated*" (again the italics are mine) "in her taking forty powders at once with fatal result." The reasoning here does not seem quite without bias. Why "culminated" when the lady seems to have been satisfied to take the 5 grains regularly for a long period? This case bears a strong resemblance to that reported by Dr. L. S. Woolf in his letter of the same issue, but Dr. Woolf seems less convinced of the part that the drug had played, and this would seem the more scientific attitude.

Sir William Willcox says that, as addiction is only discovered when the drug is withheld, I do not know whether my patients become addicts or not, but if he would refer to my letter he would see that I stated that I always found it quite easy to discontinue the drugs even after long periods. Except in very rare cases, and these in the types to which I referred, I have found no addiction, and this is borne out by the experience of many medical men whom I have questioned on this subject. If addiction is so likely to occur, it would be interesting to hear where these

addicts are, and what they are doing. Neither I nor, from inquiry, most of my colleagues and many general practitioners see them. Addicts to any drug are usually seen by a number of medical men, as the condition is a chronic one, and from experience I have found that the same patient is frequently on the list of many physicians.

Sir William Willcox emphasizes the deterioration he has observed in those taking the drugs in question. On the other hand, Dr. E. Goodall, writing on the luminal treatment of epilepsy in the Cardiff Mental Hospital, says: "Very gratifying results have been obtained by the administration of sodium luminal to epileptics. It arrests the attacks, especially the grand mal, and has no deleterious effect on the physical and mental conditions of the patient, as have the bromides and allied drugs."

I have read the paper in the *British Journal of Experimental Pathology* quoted by Sir William Willcox. The research work for this paper was carried out on cats and monkeys, and the drugs employed were sulphonal, trional, and the barbitone group. As to the toxicity of the two former, I am fully in agreement; I have seen all the physical signs reported, and it is for this reason that I seldom use these drugs, but this question is not at the moment under discussion. With regard to the barbitone group, it is stated in this paper that they do not induce sleep in cats, so that at the very outset it is clear that these drugs act on cats in quite a different way from the effect they have on human beings. But more remarkable still, in view of the facts, is it that this piece of research should be adduced as having any bearing on the effects of these drugs when given to human beings in therapeutic doses. In these experiments cats weighing 600 to 1,000 grams were given 5- to 10-grain doses of veronal, in a few instances beginning with 2½ grains. Taking an average man at 70 kilos—that is, 70,000 grams—to make the dosage comparable he would be taking 400 or 500 grains. The monkeys weighed 5 lb., and were given 5 to 10 grains of veronal, the comparable dose for a man being 140 grains. The writers of the paper state, "The barbitone group of drugs showed similar but less pronounced exhaustion effects (than sulphonal and trional) and it was found that veronal and diad could be given to cats for many days without appreciably impairing the general well-being of the animals." If the barbituric acid group are as dangerous as Sir William Willcox believes, the marvel is that they survived at all.

I still await any proof that these drugs, given in therapeutic doses even over a long period, are harmful or cause any ill effects other than the simple rash at times produced in those who have an idiosyncrasy to them.—I am, etc.,

London, N.W.1, June 8th. MAURICE CRAIG.

P.S.—Through the courtesy of the Editor I have been permitted to see some of the other letters appearing in this issue. I should like to emphasize again that the opinion that I expressed in my letter in the issue of May 28th is based on long experience in treating normal persons of all ages in various activities of life. The physiologists tell us that sleep defective in quality or quantity leads to deterioration in the tissue cells of all organs, including the nervous system, and this is in accordance with clinical experience. Therefore it is incumbent upon the medical profession to treat defective sleep far more seriously than has been the custom in the past. My experience is that if a patient has been prescribed and is taking a sedative in the barbituric acid group and any untoward symptoms arise in the course of the illness, these are at once ascribed to the drug, whereas in truth the symptoms belong to the disorder for which the drug is being given and occur in persons who are not taking, and have never taken, any of these drugs. (Of course, I do not here include persons who have taken an improper dose for ulterior purposes.) All I am asking for is clearer thinking and closer observation. I was brought up to view sedatives in the same light as many of your correspondents, but in the struggle over many years to prevent and repair disease certain points begin to stand out clearly. I do not ask anyone to accept my experience or my conclusions; but, knowing how crippling and at times how devastating sleeplessness may be, one is compelled to examine every avenue to try to prevent its results. For doing this I have found over many years that the barbitone group afford the best results with the minimum of ill effects.—MAURICE CRAIG.

RHEUMATIC INFECTION IN CHILDREN.

SIR,—Dr. A. Dingwall Fordyce writes (June 11th, p. 1081) with so much friendly appreciation that the thought that he is "attempting to pick holes" is far from my mind, more especially as I do not think that there is any great disagreement between us if due allowance for the difference of approach to the problems of rheumatism is made.

Dr. Fordyce is at his ease studying the lights and shades of the rheumatic picture. Those with whom I was working were in a less enviable position. We were attempting to hew out certain facts which would serve as landmarks for those whom we hoped would come along to help in the prevention and control of the disease amongst the children of this country. Thus, his statement that "juvenile rheumatism under satisfactory conditions can usually be controlled" becomes our statement that juvenile rheumatism "is a disease of the poor." Allowing for the difference of outlook there is no great antagonism between the two views. Again, when both committees fail to find that heredity is an etiological factor of moment, we tended to stress the fact that we found no great hereditary predisposition such as would be a bar to successful prevention of the disease. Dr. Fordyce puts it that the evidence proves nothing for or against its importance. Even so, this is a point.

The only view expressed by Dr. Fordyce with which I do not really agree is his suggestion that potential cases of rheumatism are common in the well-to-do classes. Although I do not think that the difference in frequency amongst the rich and the poor is as great in the potential as in the declared cases of rheumatism, yet even with these in mind I should still regard juvenile rheumatism as a disease of the poor.

Dr. Fordyce's letter is at once so kind and yet so stimulating and thoughtful that in taking this line in reply I feel conscious of appearing brusque and unsympathetic. I trust he will be assured that with him I know that it is down the little by-paths that the interests lie, yet some at least must keep to the wearisome high road. I am, etc.,

London, W.1, June 11th. REGINALD MILLER.

THE CONSTITUTIONAL FACTOR IN DISEASE.

SIR,—I can assure Dr. Hurst (June 4th, p. 1032) that I quite understood his position and had given consideration to the four additional reasons stated in his letter. My purpose in entering a caveat against the too ready acceptance of his views was based on (1) the paucity of the available data; (2) the qualifications in the terms "almost always," "probably always," and "often," in the reasons set forth by Dr. Hurst in his letter, and (3) a consideration of the results of the researches of Dr. William Hunter on medical sepsis, which largely form the basis of our present knowledge of the anaemias with and without lesions in the nervous system. These have not yet received the recognition and study which their great importance demands.

Dr. Hurst has not replied to my request for precise information as to the tests he employed, and the results obtained from them, which satisfied him that he could exclude an alimentary toxaemia as an etiological factor in migraine. He has contented himself with the general statement that he has never found any abnormality by means of test meals, microscopical, chemical, and bacteriological examination of the stools, radiological examinations of the alimentary tract, etc. It is obvious that much depends on what is looked for, and on the views entertained as to what constitutes normal urine and stools, and in regard to this I rather think our views may be fundamentally different. He invites me to give him details of the investigations which have taught me that migraine is due to an alimentary toxaemia. This is not, strictly, my position. Alimentary toxaemia is in my view, one form, and a most

important one, of general medical sepsis, which often exists for a long time before revealing its presence. I find striking confirmation of this view in Dr. Hurst's lecture, in which he points out that "the bodies of about 10 per cent. of all people dying in adult life contain gall stones," and later that "cholecystitis is the only indisputable predisposing cause of gall stones." Other sources of medical sepsis demand equal consideration.

I can best give him the information desired by reference to a case of migraine of some years' duration admitted to my ward three days ago. As a matter of routine all the recognized sources of peripheral and central irritation will be explored, but in regard to the subject under discussion, I find the urine very turbid from the presence of bacteria and cells, a growth of *B. coli* forms a carefully collected catheter specimen, and by the use of a Plombiere douche after a preliminary enema to clear out the bowel, conclusive evidence, in the general appearance and pronounced fetor of the returned fluid, of an abnormally septic state of the bowel contents. My experience of these cases leads me to attach the greatest importance to the correction of these disorders, and this can be done without ignoring the influence of heredity and other possible etiological factors.

In recent years there has been a marked tendency in medical writings to belittle the existence of an alimentary toxaemia. In regard to this, it is reasonable to suggest that the remarkable developments of abdominal surgery in the past thirty years—more especially in relation to diseases of appendix, stomach, duodenum, and gall bladder—have some bearing on the point. The common surgical abdominal disorders are, in the main, end-results of an acute, subacute, or chronic septic process, and the necessity for the surgeon arises from the failure of the physician. There is good reason for thinking that the progress of medicine in the future will largely depend on our recognition of the profound importance of medical as opposed to surgical sepsis. The problems must be faced with an open mind, and it is probable that in the process a good deal of present medical teaching will require revision. I may be allowed to close by quoting a relevant extract from a lecture by Dr. Abernethy, delivered to the Royal College of Physicians in 1815, a lecture designed to explain some of John Hunter's opinions, which were, in Dr. Abernethy's opinion, receiving too tardy recognition from the profession at that time:

> "May I venture to suggest another reason why some do not understand Mr. Hunter? If we wish to learn what another thinks, we must dispose our minds to receive instruction in the very manner it may be conveyed to us. We must relinquish, for a time, all attention to our own opinions, in order to learn those which are to be communicated. The same processes of mind must be gone through or the same results cannot be obtained; we must follow in exactly the same steps or we shall never arrive precisely at the same point. It is a very ancient observation that self-conceit opposes a constant and sometimes an insurmountable barrier to instruction."

—I am, etc.,

Edinburgh, June 5th. CHALMERS WATSON, M.D.

PULMONARY EMBOLISM FOLLOWING FRACTURE OF LEG.

SIR,—Dr. Erskine Faraker's interesting account of fatal pulmonary embolism following a simple Pott's fracture (June 11th, p. 1056) raises again the question of where the thrombosis primarily takes place. His suggestion, that early massaging may be a factor in the causation of pulmonary embolism, implies the formation of the thrombus at the site of the lesion, but in our experience this is not necessarily so; clotting in many instances in all probability occurs in the great veins of the lower abdomen, particularly the inferior vena cava.

This is borne out by the fact that we have known pulmonary embolism occur: (*a*) following an uneventful cataract operation—fatal pulmonary embolism occurred eight days afterwards—this case is recorded by T. G. W. Parry in the BRITISH MEDICAL JOURNAL, October 10th, 1925; (*b*) following rest in bed for traumatic synovitis of the knee-joint; and also by the fact that (*c*) at the present time we have under observation a case of thrombosis of the inferior vena cava following appendicectomy nearly a year ago; fortunately the main clot has apparently organized and become adherent in the inferior cava, but this patient after operation had some pulmonary symptoms which conceivably were due to minute infarctions.

Our experience so far is in accord with that of Mr. Lockhart Mummery, who has written so ably on this question.

That pulmonary embolism may result from thrombosis at the site of injury is borne out by an instance which occurred following bruising of the femoral vein by manipulation of a dislocated hip. This case was recorded by A. W. Sheen in the BRITISH MEDICAL JOURNAL for November 22nd, 1924. Cases which occur following phlebitis, and the post-puerperal ones, are further instances of clotting at the site of the primary lesion.

It appears, therefore, that the thrombosis may occur (*a*) at the site of the lesion, (*b*) in the great veins of the abdomen. In our opinion, in the majority of cases, especially the post-operative and those following simple fractures or trivial injuries, the clot formation occurs in the great veins of the abdomen and away from the site of the lesion.

This question of where the clot forms is of importance, not only in so far as it concerns the pathogenesis of this distressing condition, but also because it concerns the question of treatment. If the primary lesion is the site of the thrombosis, early massage is contraindicated; on the other hand if stasis in the inferior cava is, as we believe, the site of the clot formation in the majority of cases, especially those following operation and simple fractures, early movements are desirable.—We are, etc.,

A. W. SHEEN, M.S., F.R.C.S.,
Director,
LAMBERT ROGERS, F.R.C.S.,
Assistant,
The Surgical Unit, Welsh National School of Medicine, the Royal Infirmary, Cardiff.

June 15th.

UROGENITAL TUBERCULOSIS.

SIR,—I am much interested in Mr. Nitch's favourable view of the value of tuberculin in renal tuberculosis (May 14th, p. 863) and also in Dr. Stavely Dick's comment and argument thereupon (June 11th, p. 1083).

Although in 1921 it was stated in an official report that I considered renal tuberculosis to be unsuitable for tuberculin treatment, my real views based upon experience, were stated in 1912, in my Weber-Parkes prize essay, pp. 109-110, as follows:

> "In suspicious cases of chronic pyelitis or of renal trouble I have several times used the tuberculin test in diagnosis, and am astonished that so many writers, in discussing the diagnosis of renal tuberculosis, overlook the tuberculin test. Not only is tuberculin of very great value in the early diagnosis of renal tuberculosis, which so often runs a latent course even for years, but renal tuberculosis in my experience seems to be particularly amenable to tuberculin treatment. Unfortunately, troubles of the bladder and kidney, especially associated with pyuria, are supposed to belong to the domain of surgery, and I have found that surgeons especially look askance at tuberculin, so that I have seldom had opportunities of showing the value or otherwise of the tuberculin test in the early stages of renal tuberculosis. This field is only waiting to be explored by the searchlight of tuberculin, and I believe a rich harvest of results will be reaped thereby."

Moreover, in this essay I give four cases of advanced genito-urinary tuberculosis treated with tuberculin, one of them (p. 315, No. 3) with phenomenal success—the other three with considerable success. Since 1912 I have treated many cases, and that related in the Appendix I of my brochure *The Tuberculin Dispensary for the Poor* is an independent and eloquent tribute to the value of tuberculin. If tuberculin can do so much in the hopeless stages, what may it do in an early stage? In no case has any patient suffering from genito-urinary tuberculosis been worse after treatment.

My experience with tuberculin in the diagnosis and treatment of urogenital tuberculosis justifies me in saying that those who have not tried tuberculin in this form of disease cannot form any opinion of its great value. If its value in diagnosis and treatment were fairly appraised and medical measures, including tuberculin

above everything else, were at least tried before surgical methods were adopted, the sufferers from this form of tuberculosis would often be saved from a severe and dangerous surgical operation.—I am, etc.,

London, N.W.1, June 11th. W. CAMAC WILKINSON, M.D.

MENTAL DEFICIENCY ADMINISTRATION.

SIR,—I shall be greatly obliged if you will allow me to comment upon the editorial article in the JOURNAL of June 4th (p. 1020) regarding mental deficiency administration.

I do not propose to refer in detail to the memorandum of the Society of Medical Officers of Health to which you allude. I would merely say that a perusal of this document seems to indicate the existence of so much misunderstanding regarding the report of the Board of Control, its attitude towards the Board is so markedly hostile and its language is so intemperate—indeed, I might not unfairly say so offensive—that one cannot but wonder how such a memorandum came to be passed by the society. This tone is all the more unfortunate since the charge may well be made that those responsible for it do not occupy an entirely disinterested position concerning the chief matter at issue.

With the view that disease of mind should be regarded as part of disease in general I entirely agree. The progress of psychological medicine in the past has suffered greatly from the failure to appreciate this relationship, and one of the most satisfactory features of recent years has been the gradual breaking down of the artificial barrier which has long existed between disease of mind and disease of body. Further, I entirely agree that the administration of the various Acts dealing with mental disease should form part of the public health service, and that there should be the closest co-ordination of all the branches of this service. But you, and the memorandum, go on to say that this co-ordination should be secured by placing the administrative control of all these services in the hands of *one individual*—namely, the medical officer of health—and it is here that I venture to demur. I note your statement that this is the declared policy of the British Medical Association; it would be very interesting to know on what occasions and under what circumstances this decision was arrived at, and particularly to what extent the matter was considered by the general body of the profession, apart from those holding official positions.

My objection to this policy of the creation of the post of Pooh-Bah is based upon the deliberate opinion that, owing to the developments in medicine which have taken place in recent years, it is no longer possible for any single individual to possess that knowledge of all its branches which is necessary for efficient administration. There are certain branches, such, for example, as those dealing with venereal disease, tuberculosis, infectious diseases, inspection and treatment of school children, an adequate knowledge of which is possessed by every well educated medical practitioner. The administration of these services may well remain in the hands of the chief medical officer, the actual work being done by special assistants. But there are other branches of work in which this is not so, and this is peculiarly the case with mental disease. I have no hesitation in saying that the successful ascertainment, diagnosis, treatment, and administrative disposal of persons suffering from disorder, disease, or defect of mind can only be made by a practitioner who has spent years in the study of these conditions; and that there are very few, if any, medical officers of health who possess either the special knowledge, the experience, or even the time to do this work. Here also the work could doubtless be delegated to an assistant possessing the necessary qualifications; but to secure efficiency of administration it would be essential that such subordinate officer should be given a considerable degree of freedom, that his initiative should be encouraged, and, most important, that he should be in personal contact with, and responsible to, the statutory committee charged with this duty. I hold no brief for the Board of Control, but so far as I understand their attitude this is all they ask for. They appear to be of the opinion that part, at all events, of the failure of local authorities to administer the Mental Deficiency Act is due to this work having been relegated to medical officers of health who have little interest in, less special knowledge of, and still less available time to do the work. The failure is unquestionable. The desire of the Board that the work should be in the hands of a specially qualified officer in direct touch with the statutory committee does not seem unreasonable.

For my part I am disposed to think that the time has come when we should go even further. Psychological medicine is not only a highly specialized subject, but it is one which in the near future must inevitably cause more and more duties to be placed upon the shoulders of local administrative authorities. It is a recognized fact that if work is to be well done it must be in the hands of those interested in, and having special knowledge of it, and I very much doubt whether real efficiency will be attained until the administration of this branch of medicine is made a separate department under its own chief. There are plenty of young well qualified members of the profession taking up this special work, but they naturally hesitate to enter the service of local authorities because, as long as they so specialize, they can never attain to more than a subordinate position. This is good neither for progress nor for efficient administration, nor is it in the interests of the profession generally.

It may be suggested that the creation of such a separate department would be to undo the work of co-ordinating the various public health services, and contrary to the aim of the Ministry of Health Act of 1919. I do not think so. The aim of that Act was to secure co-ordination by placing administrative control in the hands of one council and not in the hands of one particular official—that is, the medical officer of health—of that council, and I see no reason why co-ordination should in any way suffer by the heads of the respective departments being colleagues meeting one another on equal terms. Such an arrangement would certainly be more likely to attract practitioners specializing in psychological medicine, and would thereby make for greater efficiency and the advantage of the community.—I am, etc.,

London, W.1, June 6th. A. F. TREDGOLD.

*** Some comment on Dr. Tredgold's letter appears this week at page 1117.

THE MEDICAL MAN IN PARLIAMENT.

SIR,—I was interested to read Dr. Graham Little's assertion in your issue of June 11th (p. 1088) that "the combination of medical and parliamentary work is possible," and "that a man in practice is more able to gauge the feeling of the profession than one who has no further contact with it." The truth or otherwise of these assertions depends upon the conception of the duties of a member of Parliament, either by the member himself or his constituents.

Dr. Little himself is in a privileged position. He is an "Independent" representing London University, and was returned to Parliament to represent the graduates of that University. He lives and practises in London, and as long as his conception of his duties is to look after the interests of that University he can, and does, admirably fulfil those duties. All that is necessary for him is to be in the House when anything affecting the interests of his University is under discussion.

The same ideal can be attained by any man representing a sectional interest, be it doctor, lawyer, business, or railway, etc., and who is content to limit his activities for the use of his section. The same position may be possible for a provincial specialist, but it would not be so easy, as it would necessitate occasional absences from his practice, and I imagine in most cases his practice would suffer.

If, on the other hand, the conception of a member of Parliament's duties is that he is a legislator, legislating for the benefit—or otherwise—of the nation and empire, then I assert most strongly that the duty of a member of Parliament is a "full-time job," and that no man can give his best attention both to Parliament and his profession—one *must* suffer. The fact that probably the majority of the House consists of men in the active practice of their business or profession does not vitiate my contention. They can only come to the House when their

outside activities are over, and vote with very little knowledge of the subject under debate. It may be argued that all votes are given according to party, which is generally true, but it occasionally happens that one has the opportunity in debate of putting a point of view which receives consideration. My main objection to Dr. Little's assertion is the fact that the real work in Parliament is done in standing committee, where each line of a bill is thoroughly discussed and the "back bencher" has his opportunity of directly influencing legislation, and where a man's knowledge and experience are of great value. These committees meet, as a rule, two mornings weekly, from 11 a.m. to 1 p.m., and Dr. Little cannot attend many of these committees without sacrificing part of his professional work. The result is that sometimes there is a difficulty in maintaining a quorum, on account of the outside activities of many of the members, and members who are "free" are compelled to put in full time to make up for the absence of the others.

The statement that men in practice are better able to gauge the feeling of the profession may be true for men in general practice, but I doubt it, particularly in the case of specialists. The activities of the medical press, and letters from medical men in practice, keep the medical member of Parliament who has retired from practice in sufficiently close touch with medical opinion to discount Dr. Little's statement to a large extent.

As most members are returned by the votes of the general public and represent all interests, it follows that the more time the member devotes to his parliamentary duties the better he represents his constituents; and the ideal to be aimed for in my opinion is to regard one's parliamentary duties as a "full-time job."

I do not think it desirable that Parliament should consist of men returned to look after "sectional" interests, although there must be exceptions, as in Dr. Little's case. An increase in the number of medical members would be, I think, an advantage, both to Parliament and the country, as they have been in such intimate touch with people during their professional life that they are eminently suited to understand and voice the opinion and wishes of a very important section of the community—knowledge gained quite apart from the stress and excitement of political controversy, and therefore of more real value. —I am, etc.,

House of Commons, June 13th. A. VERNON DAVIES.

Obituary.

T. H. FIASCHI, M.D.,

Sydney, N.S.W.

THE death occurred on April 17th of Dr. T. H. Fiaschi of Sydney. He was the son of Professor L. Fiaschi of Florence, and was born there in 1853, was educated at the Universities of Pisa and Florence, and, having graduated M.D. and Ch.D., went to New South Wales at the age of 22. He practised first at Cooktown, and was on the Palmer goldfield in its stirring days. Thence he went to Windsor, where he spent some years engaged in the practice of his profession and in agriculture. In 1883 he moved to Sydney.

In 1891 he joined the New South Wales Army Medical Corps as captain, attached to the New South Wales Lancers; in 1896 he was with the Italian Army in Abyssinia, and received the Cavalier's Cross of St. Maurice and Lazarus for his services; and in 1898-1900 he commanded the New South Wales No. 1 Field Hospital with General Hutton's Brigade in South Africa. For services at Paardeberg he was mentioned in dispatches and received the D.S.O., and when he returned to Sydney he was promoted lieutenant-colonel in the A.M.C. He became colonel in 1911, and principal medical officer of the Second Military District of the Commonwealth.

When the great war commenced Dr. Fiaschi went to England as commanding officer of No. 3 Australian General Hospital, which was established eventually at Lemnos. There he worked hard until his health gave way, and he was invalided to England. After a holiday he reported fit for duty, but was not content to accept a position in a military hospital in England, and asked to be allowed to return to Australia. He went first to Italy to visit his native city, and arrived there just after the great Austrian advance in the Trentino. He heard that the Italians urgently needed surgeons, so he resigned from the A.I.F., and joined the Italian army as captain in charge of the surgical department of the hospital at Schio, near the Trentino frontier, and about twelve kilometres from the trenches. There he remained for twelve months.

In 1902 he became honorary surgeon to the Governor-General, and later consulting honorary surgeon to the Sydney Hospital, and examiner in clinical surgery to the University.

Next to his professional work came his passionate love for the soil—for agriculture. He liked nothing better than to be associated with the men of the primary industries, and they esteemed him profoundly too, for, as a viticulturist—he was proprietor of the well known Tizzana vineyards—he helped enormously to develop the wine industry in Australia.

He was one of the foundation members of the New South Wales Branch of the British Medical Association (1901), and was a foundation member of the College of Surgeons of Australasia.

DONALD MACDONALD, M.B., C.M.,

Badenoch, Inverness-shire.

ON May 27th Dr. Donald MacDonald of Craigville, Laggan, died suddenly at Elgin, where he was on holiday. He was the son of the late Mr. Hugh MacDonald of Fort William, who was well known throughout the Western Highlands in the old coaching days as a mail-coach contractor. Dr. MacDonald graduated M.B., C.M. at Edinburgh University in 1893, and after spending some time in general practice in England settled at Laggan and was appointed medical officer of health to Laggan parish council. His genial and kindly disposition made him deservedly popular with his patients and throughout the district of Upper Badenoch. Dr. MacDonald took a close interest in local affairs and acted both as a county councillor and as a member of the education authority. In his sympathies he was essentially a Highlander, being a warm supporter of the old Highland game of shinty, and he travelled long distances to be present at important matches of the game. He had an intimate knowledge of the Gaelic tongue, and conversed in it whenever possible; this rendered firmer the bonds of union between him and his Highland patients. He had for many years been a member of the British Medical Association and frequently attended the meetings of the Inverness Division, travelling about 60 miles to do so. His practice in the wild district of Badenoch was carried on with great difficulty in the winter time, and on one occasion for devotion to duty in perilous circumstances he was awarded the Carnegie Medal. Some two years ago Dr. MacDonald's friends and patients celebrated his semi-jubilee as medical officer of health by publicly presenting him with an illuminated address accompanied by a handsome cheque. His death will be keenly felt throughout the district of Badenoch, where his medical skill and kindly personality had made him greatly beloved.

DR. WILLIAM ANDERSON FULLER died suddenly on May 27th, in a nursing home at Leeds, at the age of 54. He received his medical education at Guy's Hospital, and obtained the diplomas M.R.C.S., L.R.C.P. in 1898. After holding the post of house-surgeon at the County Hospital, Huntingdon, and the East Sussex Hospital, Hastings, he joined the late Dr. Segrave of Milnthorpe, Westmorland, and after his death carried on the practice for over twenty-one years. He was a vice-president, and later president, of the North Lancashire and South Westmorland Branch of the British Medical Association, and a former chairman of the Kendal Division. He was a magistrate and took an active interest in public life locally. He leaves a widow and three children. A colleague writes: Dr. Fuller represented the best type of country doctor, conscientious,

kindly, and capable, beloved by all his patients. By his death Westmorland loses one of its most valued and respected men.

Dr. JAMES MITCHELL WILSON, who died at his residence in Beverley, Yorkshire, on May 29th, was born in 1844 at Perth, and received his medical education at Glasgow University, where he was one of Lister's dressers; he graduated M.B., C.M. in 1867, and proceeded M.D. in 1883. After holding the post of house-surgeon in the Huntingdon County Hospital, and practising for a time at Chatteris in Cambridgeshire, he decided to devote himself to public health work, and took the D.P.H.Cambridge in 1877. He held appointments successively at Rochdale and Doncaster, and came to the East Riding as county medical officer in 1901. He retired in 1918 and was appointed consulting medical officer of health. He was the author of various books and articles on public health, and contributed a paper on river pollution at the annual meeting of the British Association for the Advancement of Science at Leeds in 1890. Dr. Wilson was a member of the Council of the East York and North Lincoln Branch of the British Medical Association from 1905 to 1909, and a former president of the Branch.

Dr. DONALD SMALLPEICE died in a nursing home on June 2nd at the age of 74. He was a student of Guy's Hospital, and took the diploma of M.R.C.S. in 1883 and that of L.R.C.P. in 1886. He was formerly in practice for some years at Queen Anne's Gate, but owing to a breakdown in health some twenty years ago he left London, and practised for a short time in Rome; he then settled in Felsted, Essex, where he remained until the autumn of last year. During the brief period of his retirement he lived near his earliest home at Guildford. In his youth Dr. Smallpeice had travelled much; he had also read widely, and possessed many interests; so that he was a most entertaining companion with a charming personality. He retained an active interest in medicine to the end of his work as a practitioner, and was greatly beloved by his patients. He leaves a widow, one son, and two daughters.

The following well known foreign medical men have recently died: Professor BARTH, formerly director of the surgical department of the municipal hospital at Danzig; Dr. WILHELM FILEHNE, formerly professor of pharmacology at Breslau, aged 83; Dr. FRANZISKA TIBURTIUS of Berlin, the first German woman doctor, and founder of a clinic for women doctors and a policlinic for indigent women; Dr. A. CAHEN of Hamburg, formerly professor at Strasbourg; and Dr. C. IPSEN, professor of medical jurisprudence at Innsbruck.

Universities and Colleges.

UNIVERSITY OF OXFORD.

IN congregation on June 7th the Vice-Chancellor (Dr. F. W. Pember, Warden of All Souls) moved the promulgation of a decree expressing the thanks of the University to Sir William Dunn's Trustees for a gift of £2 000 to endow a departmental library in the newly opened Sir William Dunn School of Pathology. The decree was passed by acclamation. An account of the buildings and of the opening ceremony appeared in the BRITISH MEDICAL JOURNAL of March 19th, p. 525.

At a congregation held on June 11th the following medical degrees were conferred:

B.M.—C. P. Blacker, J. C. K. Chilcott.

UNIVERSITY OF CAMBRIDGE.

SIR HUMPHRY ROLLESTON, Bt., Regius Professor of Physic, has been appointed to represent the University at the third Imperial Social Hygiene Congress at Westminster from October 3rd to 7th.

Professor A. V. Hill, Sc.D., F.R.S., Foulerton Research Fellow of the Royal Society, has been elected to an honorary Fellowship at King's College, of which he was a Fellow from 1916 to 1925.

At a congregation held on June 10th the following medical degrees were conferred:

M.B., B.CHIR.—C. H. Hilliard.
B.CHIR.—J. W. E. Cory.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B. PART I (*including Forensic Medicine and Toxicology*): Phœbe C. Vine; G. D. J. Ball, O. J. P. Bollon, T. L. Cleave, R. D. Jenkins, Helen B. Murgoci, Ethel M. Redman.

PART II (*Completing Examination*): J. C. Batt, H. E. C. Bentley, E. C. Bernard, E. May, E. S. Rogers, J. R. E. Sansom, M. Srisvasti. *Group I* (*Completing Examination*): G. L. Feneley. *Group II* (*Completing Examination*): Helen M. Aldwinckle.

UNIVERSITY OF SHEFFIELD.

THE following appointments were made on June 10th: *Lecturer in Diseases of the Nose and Throat*, W. S. Kerr, M.B., F.R.C.S.; *Research Assistants on Cancer*, A. F. Watson, M.Sc., Ph.D., and Mrs. S. T. Harrison, M.A., Ph.D.

UNIVERSITY OF GLASGOW.

MACEWEN MEMORIAL LECTURE.

IT will be remembered that after the death of Sir William Macewen, Professor of Surgery in the University of Glasgow from 1892 to 1924, a committee was formed to promote a fund for the purpose of commemorating his life and work. The first purpose of the fund was to procure a bust for presentation to the University and a replica to Lady Macewen. The second purpose was the establishment of a Macewen Memorial Lecture, and the third the foundation of a Macewen Medal in the Class of Surgery.

The busts have been presented to the University and to Lady Macewen and the medal has been founded and the first award made. The first Memorial Lecture is to be delivered by Professor Harvey Cushing, C.B., M.D., LL.D., Harvard University, U.S.A., in the Zoological Lecture Theatre of the University on Tuesday next, June 21st, at 3 p.m. The lecture is open to past and present students of medicine and to others interested. Subscribers to the Foundation Fund are specially invited.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

Bicentenary Memorial Fund, School of Physic.

THE fund subscribed by the medical graduates of Dublin University to commemorate the bicentenary of the foundation of the School of Physic has now been handed to the Board of Trinity College, for the purpose of establishing a Bicentenary Memorial Prize to be awarded each year to the winner of the Medical or Surgical Travelling Prize. In accepting the fund the Board expresses thanks to the subscribers for "a very generous benefaction to the College." The amount of the fund is about £730.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on June 9th, when the President, Sir Berkeley Moynihan, Bt., was in the chair.

Fellowship.

It was reported that 108 candidates had presented themselves for the Fellowship examination, of whom 25 were successful, including H. I. Deitch, who had not yet attained the requisite age. The diploma of Fellowship was conferred upon the following candidates:

H. B. Bullen, E. Wolff, W. A. Richards, E. L. Robert, C. M. Gwillim, R. V. Hudson, J. D. R. Murray, J. Roberts, A. L. Walker, W. A. Mill, W. H. Gervis, G. H. Pitt, F. W. Roques, M. A. Paul, W. H. A. Dodd, E. W. Riches, H. G. Armstrong, Alfreda H. Baker, W. K. Connell, R. L. Dodds, I. J. Fraser, W. J. Henry, D. McKelvey, S. V. Unsworth.

Membership.

The diploma of M.R.C.S. was conferred upon the following candidates who have passed the requisite examinations and complied with the by-laws:

V. F. Anderson, F. A. J. Bouloux, Ethel E. M. Ogilvie, Dulcie J. Peake, Winifred M. Turner, Joan B. Walker.

Appointment of Representatives.

Sir John Bland-Sutton was appointed to represent the College at the commemoration in October next of the centenary of the granting of the Charter of King's College, Toronto, now the University of Toronto.

Sir Berkeley Moynihan was re-elected to represent the College on the Court of Governors of the University of Sheffield for three years.

Votes of Thanks.

The thanks of the Council were expressed to Sir John Bland-Sutton, on his retirement from the Council, for his services during his term of office on the Council, extending over seventeen years, including three years as President.

A vote of thanks was given to Miss Hunter of Blackheath for presenting to the College a combined bookcase and writing table, formerly the property of John Hunter.

Examiners.

The following examiners were appointed for the ensuing year:

Dental Surgery (Surgical Section): L. B. Rawling, H. S. Clogg, T. P. Legg, G. S. Simpson, R. J. Howard, G. E. O. Williams, C. H. S. Frankau, and J. Murray. *Anatomy for the Fellowship*: W. Wright, F. G. Parsons, W. E. Le Gros Clark, and C. P. Wakeley (re-elected). *Physiology for the Fellowship*: J. B. Leathes and H. E. Roaf (re-elected), C. A. Lovatt Evans and R. J. S. Macdowall.

Under the Conjoint Examining Board for the ensuing year:

Elementary Biology: T. W. Shore and J. P. Hill. *Anatomy*: H. A. Harris, O. S. Hillman, and J. B. Hume (re-elected). *Physiology*: G. A. Buckmaster (re-elected) and D. H. de Souza. *Midwifery*: D. W. Roy, H. B. Whitehouse, and C. White (re-elected), T. B. Davies. *Diploma in Public Health*: Part I, R. T. Hewlett (re-elected); Part II, C. W. Hutt. *Diploma in Tropical Medicine and Hygiene*: Pathology and Tropical Hygiene, W. P. MacArthur (re-elected); Tropical Medicine and Surgery, P. H. Manson-Bahr (re-elected). *Diploma in Ophthalmic Medicine and Surgery*: Part I, C. B. Goulden and H. W. Lyle (re-elected); Part II, R. A. Greeves. *Diploma in Psychological Medicine*: F. L. Golla (re-elected). *Laryngology and Otology*: Part I, A. H. Cheatle (re-elected) and W. M. Mollison; Part II, S. R. Scott (re-elected).

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting of the Fellows, held on June 10th, the President duly admitted as members of the College the following successful candidates: Samuel Barron, L.R.C.P. and S.I., Timothy Maurice Healy, M.B., N.U.I. Mr. Healy is a son of H.E. the Governor-General of the Irish Free State, and served for some years as Assistant Master of the Combe Lying-in Hospital, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following officers have been re-elected for the ensuing year: *President*: Andrew Fullerton, F.R.C.S.I.; *Vice-President*, Thomas E. Gordon, F.R.C.S.I.; *Secretary*, Sir F. Conway Dwyer, F.R.C.S.I.

ROCKEFELLER MEDICAL FELLOWSHIPS.

THE Medical Research Council announces that on behalf of the Rockefeller Foundation it has made the following awards of Medical Fellowships provided by the Foundation and tenable in the United States of America during the academic year 1927-28. These Fellowships are awarded to graduates who have had some training in research work either in the primary sciences of medicine or in clinical medicine or surgery, and who are likely to profit by a period of work at a university or other chosen centre in America before taking up positions for higher teaching or research in the British Isles:

ROBERT WILLIAM FITZGERALD COLLIS, M.B.Cantab., M.R.C.P.; Resident Medical Officer, King's College Hospital, London.
DAVID KRESTIN, M.D.Lond., M.R.C.P.; Medical Registrar, London Hospital.
GEOFFREY LEWIS PESKETT, M.A.Oxon.; Demonstrator in Biochemistry, University of Oxford.
Miss ISABELLA MCDOUGALL ROBERTSON, M.D.Lond.; Research Worker in the Pathology Laboratory, Maudsley Hospital, London.
THOMAS TENNENT, M.B.Glas.; Assistant Medical Officer, Maudsley Hospital, London.
EDGAR WILLIAM TODD, M.D.Cantab.; Research Worker in the Inoculation Department, St. Mary's Hospital, London.

Dr. Tennent has been appointed on modified conditions while holding a scholarship from another source.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons, which reassembled on June 13th, has completed the Committee stage of the Trade Disputes and Trade Unions Bill. Other business for the week included the second reading of the Local Authorities (Audit) Bill, which proposes that members of local authorities against whom surcharges of more than £500 are made shall be disqualified for five years.

The Government Whips have decided to oppose the passage of the Dogs' (Protection) Bill in the House of Commons. Several medical members have given notices of opposition to it.

Removal of Prisoners for Treatment.

Mental Deficiency.—In the ten years from 1916-17 to 1925-26, prisoners in England and Wales were removed to mental institutions as follows. Under Section 9 of the Mental Deficiency Act, 1913: In 1916-17, 29; 1917-18, 38; 1918-19, 63; 1919-20, 102; 1920-21, 91; 1921-22, 57; 1922-23, 66; 1923-24, 57; 1924-25, 24; and 1925-26, 43. Under Section 2 of the Criminal Lunatics Act, 1884, the transferences were as follows: 1916-17, 125; 1917-18, 101; 1918-19, 97; 1919-20, 89; 1920-21, 112; 1921-22, 102; 1922-23, 134; 1923-24, 104; 1924-25, 114; and 1925-26, 106. Persons dealt with under Section 8 of the Mental Deficiency Act, 1913, criminal lunatics ordered by a court to be detained during His Majesty's pleasure, and persons received into mental institutions on discharge from prison on expiry of sentence are not included in these statistics.

Surgical or Medical Treatment.—The number of prisoners removed, under Section 17 (6) of the Criminal Justice Administration Act, 1914, for surgical or medical treatment which could not be given in prison in each of the ten years from 1916-17 to 1925-26, were 20, 26, 22, 72, 54, 86, 66, 57, 82, and 95.

Grants to Voluntary Hospitals.—On June 13th Sir Kingsley Wood, replying to Mr. Lunn, said that, excluding contributions towards specific grant-aided services, the total Exchequer grants in aid of the general expenses of voluntary hospitals since 1918 had amounted to £500,000, voted by Parliament on the recommendation of Lord Cave's Committee. The Voluntary Hospitals Commission was still in existence, but it had no funds at its disposal.

Medical News.

DR. FRANK WACHER, who for fifty years has been medical officer of health for Canterbury, was on May 31st made an honorary freeman of that city. He was chairman of the Canterbury Division of the British Medical Association in 1912, and has served as vice-president of the South-Eastern Branch.

THE annual dinner of the Harveian Society of London was held at the Connaught Rooms on Thursday, June 9th, when the president, Dr. E. Le Févre Payne, was in the chair. The Lord Mayor of London was among the guests, and on leaving to keep another engagement made a graceful speech deputing Sir Berkeley Moynihan to reply for him on behalf of the visitors. The toast "The Harveian Society" was proposed by Sir John Rose Bradford. The president, in replying, pointed out that this year the connexion of the Society with Harvey was closer than usual, inasmuch as he believed that he was the first president who had been educated at Harvey's old school, King's School, Canterbury. The health of the many distinguished guests, proposed by Dr. Graham Little, M.P., was acknowledged by Mr. A. Latter, head master of King's School, Canterbury, Sir Berkeley Moynihan, and Mr. F. Freke Palmer. About 110 members and guests were present at the dinner.

A COURSE in advanced bacteriology will commence at the London School of Hygiene and Tropical Medicine on October 4th. It will be under the direction of Professor Topley and is intended for a limited number of post-graduate students who desire to fit themselves for bacteriological appointments at home or abroad. The fee for the course, which will be continued throughout the academic year, is 42 guineas. Further particulars can be obtained on application to the Secretary of the School, Malet Street, London, W.C.1.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that Dr. A. J. Whiting will give a medical clinical demonstration at the Prince of Wales's Hospital on June 20th at 2.30 p.m.; Mr. C. A. Joll, a demonstration on surgical treatment of goitre, at the Royal Free Hospital on June 22nd at 4; Mr. Griffith, a clinical ophthalmic demonstration at the Royal Eye Hospital on June 24th at 3. All these demonstrations are free to members of the medical profession. On June 27th a special fortnight's course in chest diseases will begin at the City of London Hospital for Diseases of the Heart and Lungs (fee £2 2s.). In July five special courses will be given in various subjects. The first will be an all-day two-weeks' course in cardiology, from July 4th to 16th, at the National Hospital for Diseases of the Heart; numbers strictly limited to twenty. On July 11th the Prince of Wales's Hospital Group will start a fortnight's course in general medicine, surgery, and the specialties. On the same date there will begin a week's course at the St. Mark's Hospital for Diseases of the Rectum. The other two courses taking place in July are part-time courses only; one in neurology at the West End Hospital for Nervous Diseases, starting on the 4th and lasting for a month; the other in infectious fevers at the Park Hospital, on Wednesdays and Saturdays, from July 13th to 30th. Copies of all syllabuses are obtainable from the Fellowship of Medicine at 1, Wimpole Street. A general course of work is also provided at the associated hospitals; for this a comprehensive ticket and a separate programme are issued.

THE centenary of the birth of Lord Lister and his connexion with King's College will be celebrated by the King's College Medical Society on Thursday next, June 23rd. A wreath will be placed on the memorial tablet outside the chapel by the president of the Medical Society at 4.50 p.m., and at 5 p.m. Sir Arthur Keith will take the chair for a lecture by Sir StClair Thomson, Emeritus Professor of Laryngology in the college, who will speak of Lister's personality and his achievements. Medical students and others interested in medicine are invited to be present.

A NATIONAL Conference on Maternity and Infant Welfare, under the auspices of the Central Council for Infant and Child Welfare, will be held in the Great Hall of the British Medical Association House, Tavistock Square, W.C.1, under the presidency of the Minister of Health, from July 5th to 8th inclusive. At the opening session Mr. Neville Chamberlain will deliver an address, which will be followed by a discussion on wet nursing. Other subjects selected for debate include the problem of the expectant unmarried mother; the practical teaching of mothercraft; the provision of efficient sick nursing in the homes of children under school age; day nursery problems; the incidence of venereal disease in ante-natal and post-natal clinics; the results of artificial light treatment for children under school age; and respiratory disease in relation to infantile mortality. A lecture on the pasteurization of milk in relation to surgical tuberculosis, by

Dr. A. Stanley Griffiths, will be delivered on July 5th at 7.30 p.m. A dinner for members of the medical profession attending the conference has been arranged at the Florence Restaurant on July 5th, after which an informal discussion on immunization against diphtheria will be opened by Dr. W. Ashley Lethem and Dr. J. Graham Forbes. Friday, July 8th, will be devoted to visits to centres and institutions in and around London.

THE annual general meeting of the Research Defence Society will be held at the house of the Medical Society of London, 11, Chandos Street, W.1, on Tuesday, June 21st; Lord Lamington will take the chair at 3 p.m. The first Stephen Paget Memorial Lecture will be delivered by Professor Julian S. Huxley, M.A., who has chosen as his subject "Research and the community."

THE annual summer dinner of the Glasgow University Club, London, will be held at the Trocadero Restaurant, Piccadilly, W.1, on Friday, July 1st, at 7.15 for 7.30 p.m. precisely. Dr. C. O. Hawthorne will preside. Any Glasgow University men who, though not members of the club, desire to be present are requested to communicate with the honorary secretaries, 62, Harley House, N.W.1.

A MEETING of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, on July 12th, at 4 p.m., when Sir Arthur Newsholme will deliver a presidential address on the aims and work of the society, and Dr. Godfrey Carter, lecturer on forensic medicine in Sheffield University, will open a discussion on the detection of drunkenness, with especial reference to the concentration of alcohol in the blood and urine.

THE annual meeting of the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-Minded will be held in the Recreation Room of the Sandlebridge Institution, Alderley Edge, on Tuesday, June 21st, at 3.30 p.m. Sir Frederick J. Willis, chairman of the Board of Control, will preside and open the Noah's Ark Home. The school and the homes will be open for inspection from 3 p.m. and tea will be served at Warford Hall at 4.30 p.m.

COMMEMORATION day at Livingstone College was celebrated on June 10th, when the President of the Royal College of Physicians, Sir John Rose Bradford, was in the chair. He commended the work of the college, and expressed the opinion that in this case "a little knowledge" was not "a dangerous thing," but capable of being of great service to humanity, especially to missionaries scattered all over the world, where it was impossible for the inhabitants to receive adequate medical treatment. He had been much impressed by reports he had read from students in all parts of the world, who were doing valuable work for the prevention as well as the treatment of disease. The Rev. C. Redman, a missionary of the Society for the Propagation of the Gospel, and an old student of the college, said that he had found what he had learnt there of great use when working in a district in Madagascar, where often the services of a doctor could not be obtained. Later on, when put in charge of a theological college, he had made the teaching of the prevention and treatment of disease part of the curriculum, so that students went out into the villages possessing knowledge very useful in dealing with the great ignorance of the people. Other speeches were made, including one by the Dowager Lady Buxton, who, during a recent visit to Abyssinia, had admired the work of an old student of the college.

THE Association of Physicians held its annual meeting in Belfast on June 3rd and 4th. Professor J. A. Lindsay was president, and Professor W. W. D. Thomson acted as local honorary secretary; with the aid of the physicians attached to the hospitals the local members formed themselves into a committee to provide clinical demonstrations suitable for the occasion, and to give a hearty welcome to the visitors. According to the usual routine sittings were held morning and afternoon for discussion, the morning in the University, and the afternoon in the King Edward Memorial Hall of the Royal Victoria Hospital, where on both days, in the interval, a large amount of clinical material had been collected in the out-patient department, and demonstrations were given of neurological and pathological interest. In addition a collection of items of local interest, old local books, and portraits had been formed. An excellent pamphlet of all these demonstrations, due to the labours of one or two members of the local committee, much facilitated their study.

THE second international post-graduate course in diseases of the heart and gynaecology, which was held at Franzensbad from May 22nd to 26th, was attended by six hundred medical practitioners from Czecho-Slovakia, Germany, Austria, Hungary, Poland, Rumania, Jugo-Slavia, Russia, Denmark, and Holland. The communications included addresses on cholelithiasis and pregnancy by Professor Frigyesi of Budapest, and on the various forms of circulatory obstruction by Professor Wenkebach, Vienna.

LORD EUSTACE PERCY, M.P., President of the Board of Education, will distribute the prizes at the London Hospital Medical College and Dental School on Wednesday, June 29th, at 3 p.m., in the College Library. Academic dress will be worn.

THE new ward and enlarged accommodation for out-patients at the Southend Victoria Hospital was opened on May 25th. The number of beds at this hospital, which is now eighty-six, has been doubled during the past five years, and £20,000 has been spent on extension and equipment.

A STAINED glass window has been erected in St. Michael's Parish Church, Highgate, in memory of the late Dr. Frederick William Crowdy, who for thirty-two years was a warden of the church. The dedication service was conducted by the Bishop of Willesden.

THE late Mr. F. A. Southam, emeritus professor of surgery in the University of Manchester, who died on March 9th, has left estate of the gross value of £44,900.

THE seventh congress entitled Les Journées Médicales de Bruxelles will be held from June 25th to 29th at Brussels. Excursions to Tournai and other interesting places will be arranged in connexion with it, and there will be an international exhibition of art and science applied to medicine and surgery. Further information may be obtained from the secretary, Dr. R. Beckers, 62, rue Froissart, Brussels.

THE thirty-first congress of French neurologists will be held at Blois from July 25th to 30th. Detailed information may be obtained from the secretary, Dr. M. Olivier, Blois.

ACCORDING to the *Journal of the American Medical Association* the total deaths from diphtheria in the seventy-eight cities of the United States with more than 100,000 inhabitants were approximately 3,000 in a population of 31,000,000, or more than three times the typhoid mortality in the same cities. The total average typhoid death rate for fifty-nine large cities in the United States last year was 2.77 per 100,000, the lowest ever reported in that country.

DR. PAUL CARNOT, director of *Paris Médical*, has been nominated professor of clinical medicine in the Paris faculty of medicine in succession to the late Professor Gilbert.

PROFESSOR FÜLLEBORN of the Hamburg Institute for Tropical Diseases has been invited by the Argentine Government to visit South America to study hookworm disease.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

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FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

MULTIPLE BIRTHS.

DR. L. WALLACE (127, Gloucester Terrace, Hyde Park, W.2) asks for references to statistics, or opinions, concerning the occurrence of multiple births in the different "social strata" of the community.

POISONING BY EUCALYPTUS OIL.

DR. VERNON NEWTON (Pontycymmer, Glam.) writes: Dr. P. Gibbin, in describing a case of eucalyptus poisoning in the JOURNAL of June 4th (p. 1005), states that he has failed "to find

any record in any textbook" of toxic symptoms produced by the drug. May I, therefore, draw attention to Professor Glaister's *Medical Jurisprudence and Toxicology* (fourth edition, p. 821)? There two cases (one fatal) of poisoning by eucalyptus oil are described in full. The early signs and symptoms in these cases appear to have been similar to those in Dr. Gibbin's—except that in each case the pulse is fast. Glaister also mentions two cases of this poisoning seen by Kirkness.

INCOME TAX.

Expense Attached to Appointment.

A FULL-TIME lecturer in anatomy states that one of the terms of his appointment was that he was "expected to engage in higher study and research." He has claimed to deduct the expense of visiting meetings of the Anatomical Society to exhibit his results; those expenses have been disregarded, as also the expense entailed in applying for better appointments.

*** We agree that the terms used imply as a binding legal condition that the research work shall be done, and that the expense of attending the meetings is allowable if that is similarly enjoined, either expressly or by implication. The cost of applying for another appointment is not legally deductible.

Foreign Residence.

"W. F." is about to leave for Egypt with his wife on a five years' agreement; he proposes to retain his own house in Scotland, leaving his furniture therein, and to return to Scotland annually for a six weeks' vacation. He has been advised that he will be liable only in respect of remittances to him in this country.

*** We think "W. F." runs a risk of being held to be liable on his whole income. This is due to the fact that he will be retaining a residence in the United Kingdom to which he can, and possibly will, return at yearly intervals. In such circumstances he might be held to be "resident" and "ordinarily resident" in Scotland, and, if so, would be liable on the whole of his earnings, War Loan interest, etc. We are strongly of opinion that, from the point of view of taxation, he would be well advised to let his house for three or five years, and get rid of such furniture as he might not wish to store for so long. In such circumstances he might not be held to be resident here, even when he returns on vacation, and so escape income tax altogether. A ruling might be obtainable from the Secretary, Inland Revenue, Somerset House, W.C.2, if a full statement of the facts is sent with a request for an opinion.

Motor Car Depreciation.

"W. A. W." replaced his car in 1924 and was allowed the net cost. What will be the position with regard to income tax if he replaces his present car this year?

*** The 1924 replacement would reduce the 1924 earnings, and, owing to the operation of the three years' average, would affect (in the normal course) the assessments for 1925–26, 1926–27, and 1927–28. In fact, it has no doubt affected the two former years, but owing to the statutory change in the basis of assessment the 1927–28 assessment will be made at the amount of the 1926 earnings, and consequently will be unaffected by the 1924 replacement. If a further replacement occurs now it will have its full effect on the 1928–29 assessment, because it will be fixed by the amount of the net earnings of 1927.

"W. M." purchased his present car in 1922 for £550 and has received an offer of £80 for it; the present cost of a similar car is £470.

*** If he puts the transactions through this year he can treat as an expense £470−£80=£390, the amount of the out-of-pocket cost of renewal. This will reduce the amount of his net professional earnings for 1927, and that amount will form the basis of his liability to tax for 1928–29.

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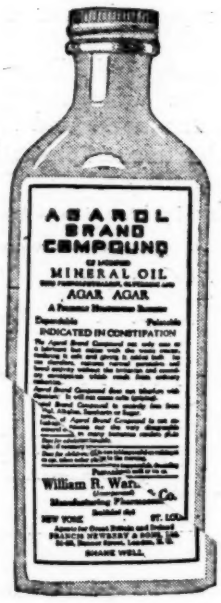

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any record in any textbook" of toxic symptoms produced by the drug. May I, therefore, draw attention to Professor Glaister's *Medical Jurisprudence and Toxicology* (fourth edition, p. 821)? There two cases (one fatal) of poisoning by eucalyptus oil are described in full. The early signs and symptoms in these cases appear to have been similar to those in Dr. Gibbin's—except that in each case the pulse is fast. Glaister also mentions two cases of this poisoning seen by Kirkness.

INCOME TAX.

Expense Attached to Appointment.

A FULL-TIME lecturer in anatomy states that one of the terms of his appointment was that he was "expected to engage in higher study and research." He has claimed to deduct the expense of visiting meetings of the Anatomical Society to exhibit his results; those expenses have been disregarded, as also the expense entailed in applying for better appointments.

*** We agree that the terms used imply as a binding legal condition that the research work shall be done, and that the expense of attending the meetings is allowable if that is similarly enjoined, either expressly or by implication. The cost of applying for another appointment is not legally deductible.

Foreign Residence.

"W. F." is about to leave for Egypt with his wife on a five years' agreement; he proposes to retain his own house in Scotland, leaving his furniture therein, and to return to Scotland annually for a six weeks' vacation. He has been advised that he will be liable only in respect of remittances to him in this country.

*** We think "W. F." runs a risk of being held to be liable on his whole income. This is due to the fact that he will be retaining a residence in the United Kingdom to which he can, and possibly will, return at yearly intervals. In such circumstances he might be held to be "resident" and "ordinarily resident" in Scotland, and, if so, would be liable on the whole of his earnings, War Loan interest, etc. We are strongly of opinion that, from the point of view of taxation, he would be well advised to let his house for three or five years, and get rid of such furniture as he might not wish to store for so long. In such circumstances he might not be held to be resident here, even when he returns on vacation, and so escape income tax altogether. A ruling might be obtainable from the Secretary, Inland Revenue, Somerset House, W.C.2, if a full statement of the facts is sent with a request for an opinion.

Motor Car Depreciation.

"W. A. W." replaced his car in 1924 and was allowed the net cost. What will be the position with regard to income tax if he replaces his present car this year?

*** The 1924 replacement would reduce the 1924 earnings, and, owing to the operation of the three years' average, would affect (in the normal course) the assessments for 1925–26, 1926–27, and 1927–28. In fact, it has no doubt affected the two former years, but owing to the statutory change in the basis of assessment the 1927–28 assessment will be made at the amount of the 1926 earnings, and consequently will be unaffected by the 1924 replacement. If a further replacement occurs now it will have its full effect on the 1928–29 assessment, because it will be fixed by the amount of the net earnings of 1927.

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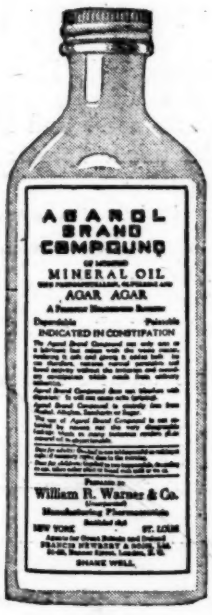

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